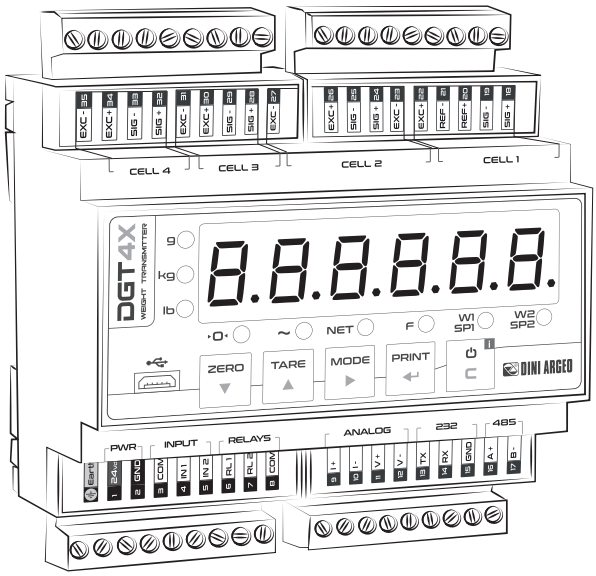
DINI ARGEO
Scales - Weighing systems
A RICE LAKE WEIGHING SYSTEMS COMPANY

DGT4XDL

Digital weight transmitter with 4 channels

USER MANUAL **ENGLISH**



Firmware version > 01.21.xx

www.diniargeo.com

Contents

Introduction

Dear Customer,
Thank you for purchasing a DINI ARGEO product.

This manual contains all the instructions for installing and commissioning of the DGT4X digital weight transmitter with digital load cells.
While thanking you for purchasing this product, we would like to draw your attention to some aspects of this manual.

This manual provides useful information for the correct operation and maintenance of the scale.

it is essential to pay attention to the contents of this manual for proper operation.

It is recommended to carefully follow the instructions for programming the weight transmitter; performing actions not indicated in this manual could compromise the scale.

The utmost care has been taken in compiling this manual, but reports of any inaccuracies are always welcome.

The transmitter is covered by warranty and MUST NOT BE TAMPERED WITH BY THE USER under any circumstances.
Any attempt at repair or modification may expose the user to the danger of electric shock and voids any warranty conditions, relieving the Manufacturer from all liability.

Any problem with the product must be reported to the manufacturer or to the retailer where it was purchased.
Always TURN OFF THE POWER SUPPLY before any installation or repair operation.

Installation requirements

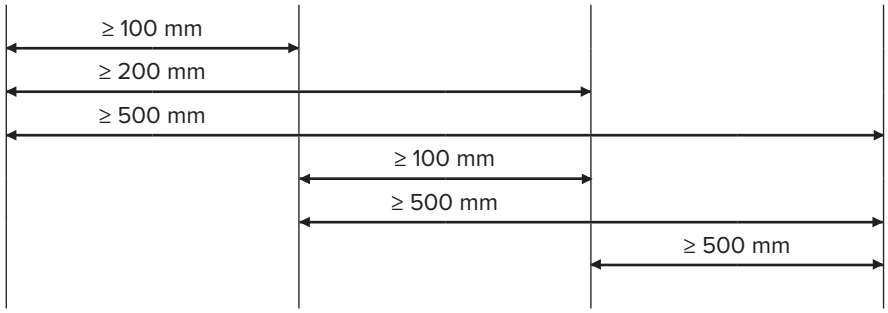
Observe the following conditions for correct installation of the transmitter:

- Flat, level surface.
- Stability and absence of vibrations.
- Absence of aggressive dusts and vapour.
- Absence of drafts.
- Ensure that the platform is level or that the load cells are evenly supported.
- Moderate temperature and humidity (15°C to 30°C and 40% to 70%).
- Do not install in an environment where there is a risk of explosion.
- All transmitter connections must be made in accordance with applicable regulations in the area and environment of installation. Observe the electrical precautions listed in the section “**Electrical precautions**”.
- Ensure that the transmitter is correctly earthed, see the relevant section “**Earthing of the system**”.
- Do not perform welding when the load cells have already been installed.
- If necessary, use watertight sheaths and fittings to protect the load cell cables.
- Any junction boxes must be watertight.
- Anything not expressly described in this manual constitutes improper use of the equipment.

Electrical precautions

- Use a regulated mains supply within ± 10% of the rated voltage.
- The electrical protections *(fuses, etc.)* are the responsibility of the installer.
- Observe the recommended minimum distances between cables of different categories **(see table on page 10)**.
- The following cables must comply with the maximum permissible lengths **(see table on page 10)**, they must be shielded and must be inserted alone in metal conduits or pipes:
  - load cell extension cables;
  - signal amplifier cables;
  - cables for connecting the serial ports;
  - analog output cables.
- The cell or amplifier cables must have an independent input in the electrical panel. They must be connected (if possible) directly to the terminal block of the transmitter without passing through the conduit with other cables.
- Fit “RC” filters:
  - on the contactor coils;
  - on the solenoid valve coils;
  - on all devices that produce electrical interference.
- If condensation can occur inside the weight transmitter, it is advisable to keep the equipment powered at all times.
- Connections to load cells and any external device must be as short as possible.
- The cable ends (connectors, leads, terminals, etc.) must be installed correctly; the cable shielding must be kept intact until close to the connection point.
- If the transmitter is placed inside an electrical panel, a shielded cable must also be used for the power supply.
- If the power cable is longer than 50m, use a cable with a cross-section of ≥ 0.5mm^2.
- Ensure the load cell power supply is correct.

RECOMMENDED DISTANCES AND CABLE CLASSIFICATION

	Category I	Category II	Category III	Category IV
Distance				
Classification	Fieldbus, LAN network (PROFIBUS, Ethernet, Devicenet...). Shielded data cables (RS232...). Shielded cables for analog digital signals < 25 V (sensors, load cells...). Low voltage power supply cables (< 60 V). Coaxial cables.	DC supply cables with voltage > 60 V and < 400 V. AC supply cables with voltage > 25 V and < 400 V.	Power supply cables with voltage > 400 V. Telephone cables.	Any cable subject to lightning danger.

MAXIMUM ALLOWED LENGTHS

Load cell	RS232	RS485	Analog output
50 metres with 6 x 0.25 mm^2 cable; 100 metres with 6 x 0.5 mm^2 cable.	15 m with baud rate up to 19200.	1200 m with shielded 2 x 24 AWG twisted pair with outer braid + aluminium strip.	**CURRENT**: 100 metres with 2 x 0.25 mm^2 cable; 150 metres with 2 x 0.5 mm^2 cable; 300 metres with 2 x 1 mm^2 cable. **VOLTAGE:** 50 metres with 2 x 0.25 mm^2 cable; 75 metres with 2 x 0.5 mm^2 cable; 150 metres with 2 x 1 mm^2 cable.

Earthing of the system

For correct earthing and optimal system operation, the transmitter, load cells, junction box, if any, and weighing structure must be earthed.

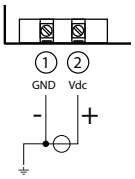
TRANSMITTER

The earth connection must be made via the appropriate terminal. The cable cross-section must be less than 2.5 mm^2. The transmitter must be powered by a dedicated power supply with earth reference. Do not connect EARTH and GND terminals together!

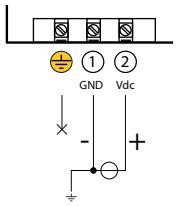
If you want to use the DGT4X to replace a transmitter without a dedicated earth terminal, make the earth connection using only the "GND" terminal and leaving the "EARTH" terminal free.

Attention: this type of connection excludes the additional circuit for protection against electrical noise.

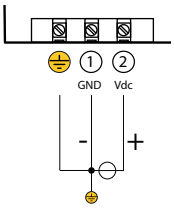
Transmitter without earth terminal



DGT4X



DGT4X Incorrect earth connection



LOAD CELLS AND JUNCTION BOX

The connection must be made by connecting the earth cables to the earth bar (cables that must have a cross-section of at least 16 mm^2); finally, connect the earth bar to the earth post with a cable having a cross-section of at least 50 mm^2.

EXAMPLES:

- If the load cells are connected to the transmitter through a junction box, the cable shield from the transmitter and the cell cable shields must be connected to the earth socket of the junction box (refer to the junction box manual) and the junction box must be earthed using a copper cable with a cross-section of not less than 16 mm^2.
- If the load cells are connected directly to the transmitter (without using the junction box), the cell cable shields must be connected to the earthing point (or earth bar).
- If the weighing system involves large and/or outdoor structures (weighbridges, silos, etc.) and the distance between the junction box and the weight transmitter is greater than 10 m, connect the cell cable shields to the earth socket in the junction box.

WEIGHING STRUCTURE

Earth the weighing structure and/or any unconnected structures (e.g. silos that release material onto the weighing structure) using cables with a cross-section of not less than 16 mm^2.
Also connect the upper part with the lower part of each cell by means of a copper braid with a cross-section not less than 16 mm^2 *(refer to the* **earthing examples on page 12 and page 13***)*.

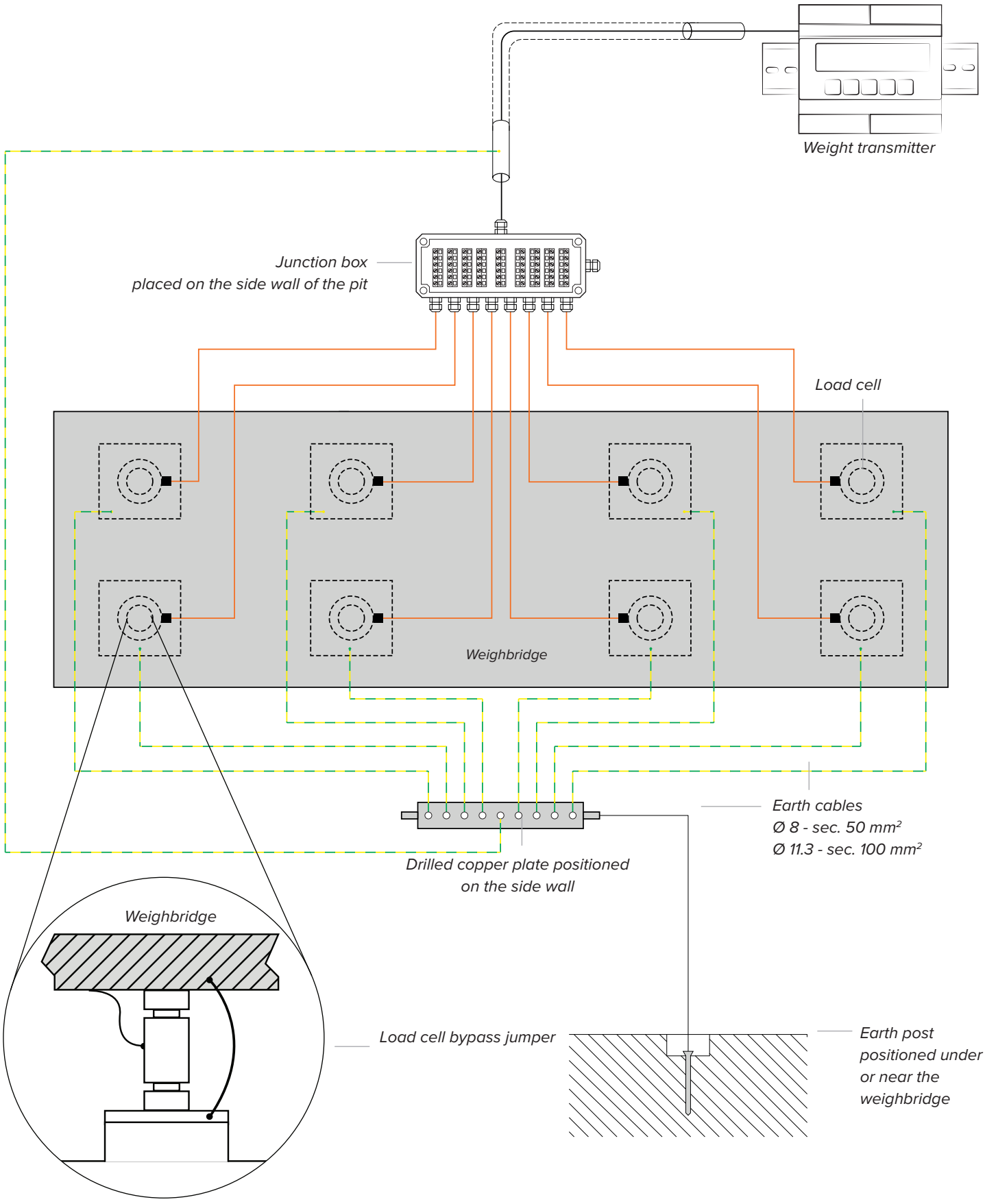
SERIAL CABLES AND CONNECTED INSTRUMENTS

Connect the serial cable shield to the earthing point (or earth bar) inside the panel. To avoid any undesired effects, the earth reference of the connection cable, power supply and transmitter must be at the same potential.

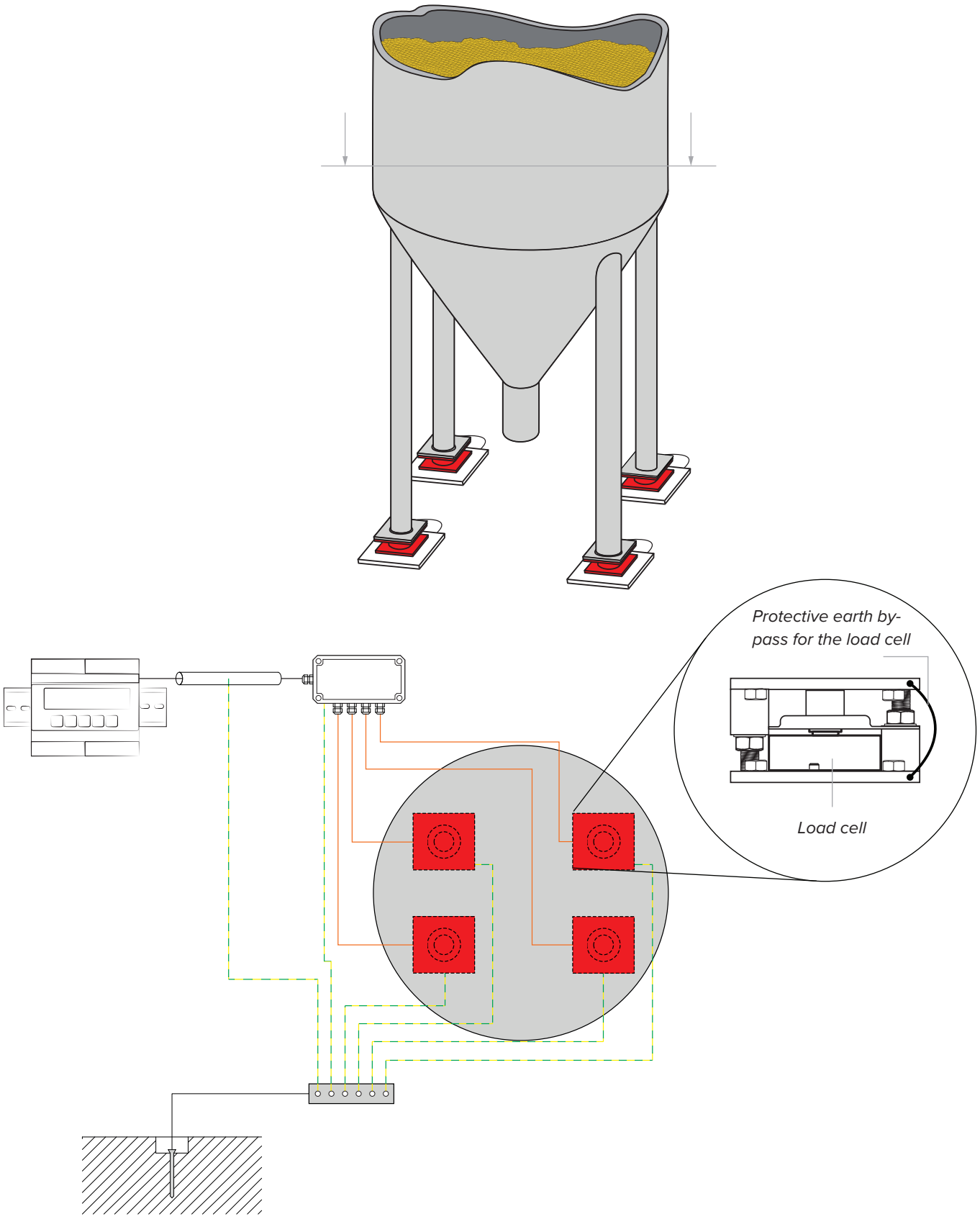
GENERAL NOTES:

- All earth cables must be of suitable length, so as to obtain an overall resistance of the earthing system of less than 1 Ω.
- If the weighing system involves large and/or outdoor structures (weighbridges, silos, etc.):
  - the earth connection must be made by connecting the earth cables to an earth bar and the earth bar to the earth post with a cable having a cross-section of not less than 50 mm^2;
  - the thickness of the cables must be greater (50 mm^2 instead of 16 mm^2 and 100 mm^2 instead of 50 mm^2), because the voltages at stake are greater (e.g. lightning);
  - the earth post must be placed at a distance of at least 10 m from the structure.
- If the load receiver is more than 10 m from the transmitter, we recommend using the SENSE line and load cells equipped with a (SENSE) compensation circuit.

EXAMPLE OF EARTHING OF A WEIGHBRIDGE



EXAMPLE OF EARTHING OF A SILO



Technical features

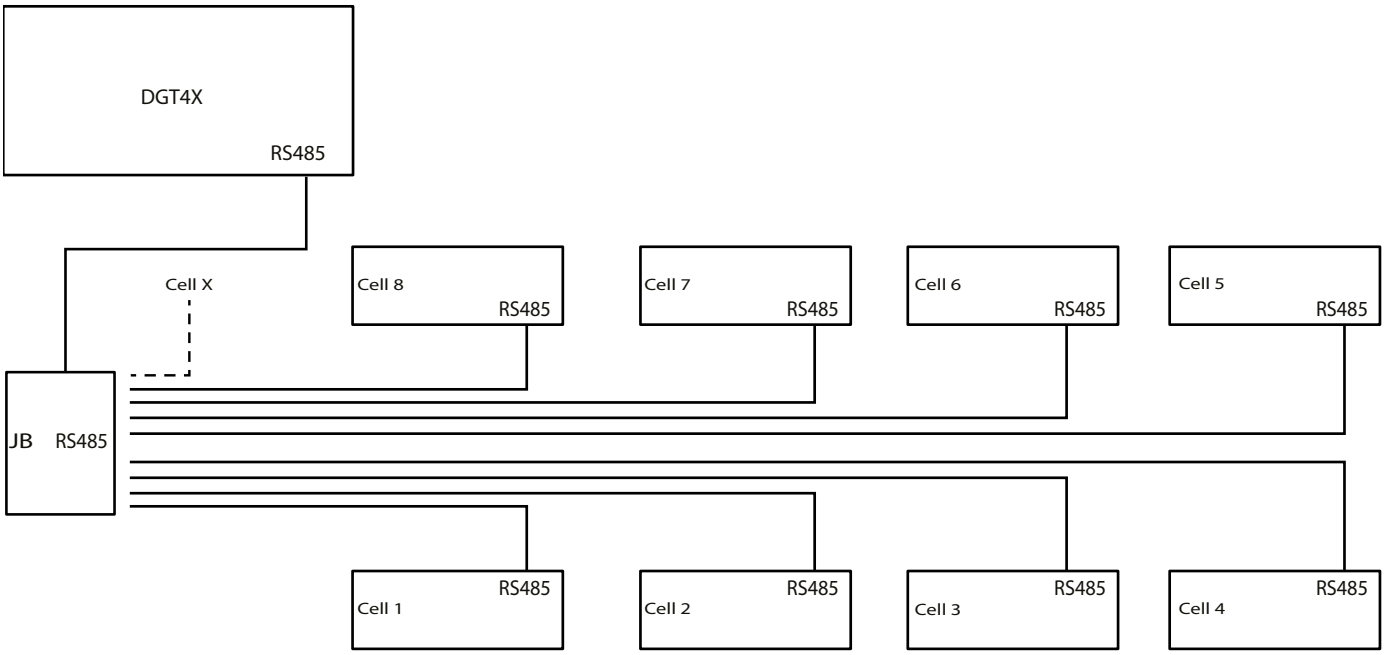
POWER SUPPLY	12 - 24 VDC LPS or with class 2 power supply.
MAXIMUM ABSORPTION (without load cells)	DGT4XDL: 4 W DGT4XDLAN: 4,5 W DGT4XDLPRONET : 7,5 W
OPERATING TEMPERATURE	From -10°C to +40°C.
DISPLAY DIVISIONS	10000e, 2 x 3000e for legal weighing, expandable up to 800,000 for internal use (with a minimum cell signal of 1.6 mV/V).
DISPLAY	6 digits, h 14.2 mm (0.56").
SIGNALS	9 status indicator LED lights.
KEYPAD	Mechanical with 5 keys.
TARE FUNCTION	Subtraction possible over the entire range.
LOAD CELL POWER SUPPLY	External
LOAD CELL CONNECTION	1 half duplex RS485 bidirectional port on terminal.
CONNECTABLE CELLS	Up to 16 cells.
CASE	Made of plastic (self-extinguishing PPO), suitable for DIN rail mounting (EN 60715 - DIN43880) or wall mounting.
SERIAL OUTPUTS	1 RS232 bidirectional port on terminal; 2 ETHERNET ports (versions DGT4XDLPRONET*); 1 USB port (micro USB type B) on front panel ➔ Virtual COM (Device). * *Fieldbus model is not equipped with a RS232 port.*
OUTPUTS / INPUTS	2 photomosfet NO or NC outputs: max 60 VDC 0.5 A max / 48 VAC 0.5A; 2 configurable inputs (bidirectional optocouplers): 12 to 48 VDC; Input reading and output update time: 1 msec; 16-bit analog output (DGT4XAN version). Current: 0 to20 mA / 4 to 20 mA. Voltage: 0 to5 VDC, 0 to 10 VDC. The maximum applicable resistance on the current output is 300 Ω while the minimum applicable resistance on the voltage output is 1 kΩ.
FIELDBUS UPDATE RATES	Up to 120 Hz.
CERTIFICATIONS	Indicated on the EC Declaration of Conformity of the product.

Load cell installation

After carrying out the instructions for the platform or load receiver, load cell connections can be made. There are two scenarios for connection depending on type of load cells.

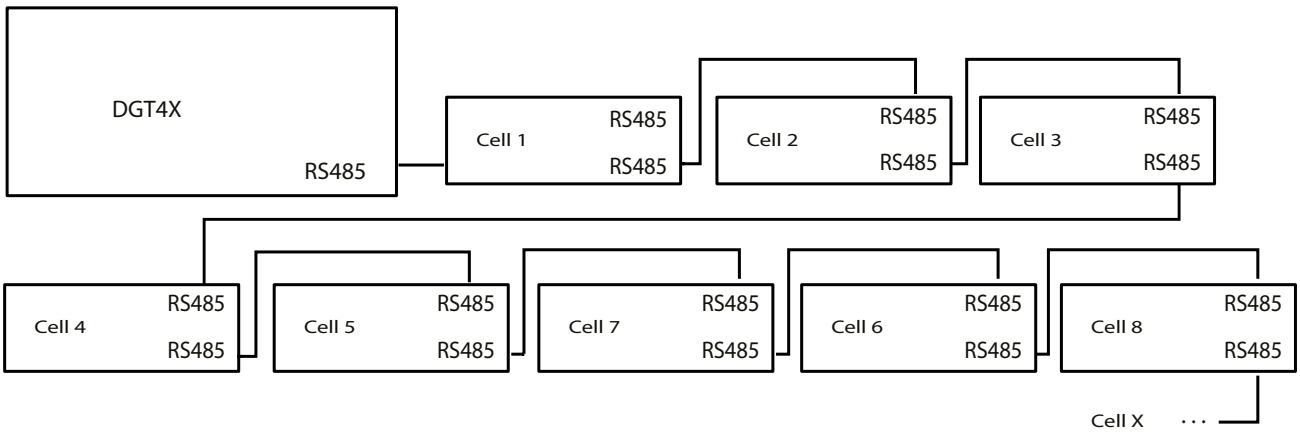
- RCD and RCPTD load cells attach to the indicator via a junction box. A shielded cable from the junction box must properly connect to the RS485 connector of the transmitter. Multiple load cells must connect through the junction box.

Junction Box Connection with Six Load Cells



- RL5416DC and RL5426DC load cells attach to the indicator via a daisy chain. A shielded RS485 cable from the first cell must properly connect to the RS485 connector of the transmitter. Multiple load cells must connect to each other creating a daisy chain. Be aware there is a typically a voltage drop in daisy chain configurations as power to each load cell typically decreases after each load cell. Ensure the load cell power supply is correct.

Daisy Chain Connection with Six Load Cells



IMPORTANT!
Activate the 485 termination resistor on the weight transmitter.

Cell Wiring Output

The firmware is compatible with four load cells: RCD, RCPTD, RL541DC and RL5426DC.

RCD

Colour	Description
White	Input +
Brown	Input -
Grey	Input Signal (A +)
Pink	Input Signal (B -)
Green	Output Signal (A+)
Yellow	Output Signal (B -)

RCPTD

Colour	Description
Red	Input +
Black	Input -
Green	Output (A +)
White	Output (B -)
Black (Thick)	Shield

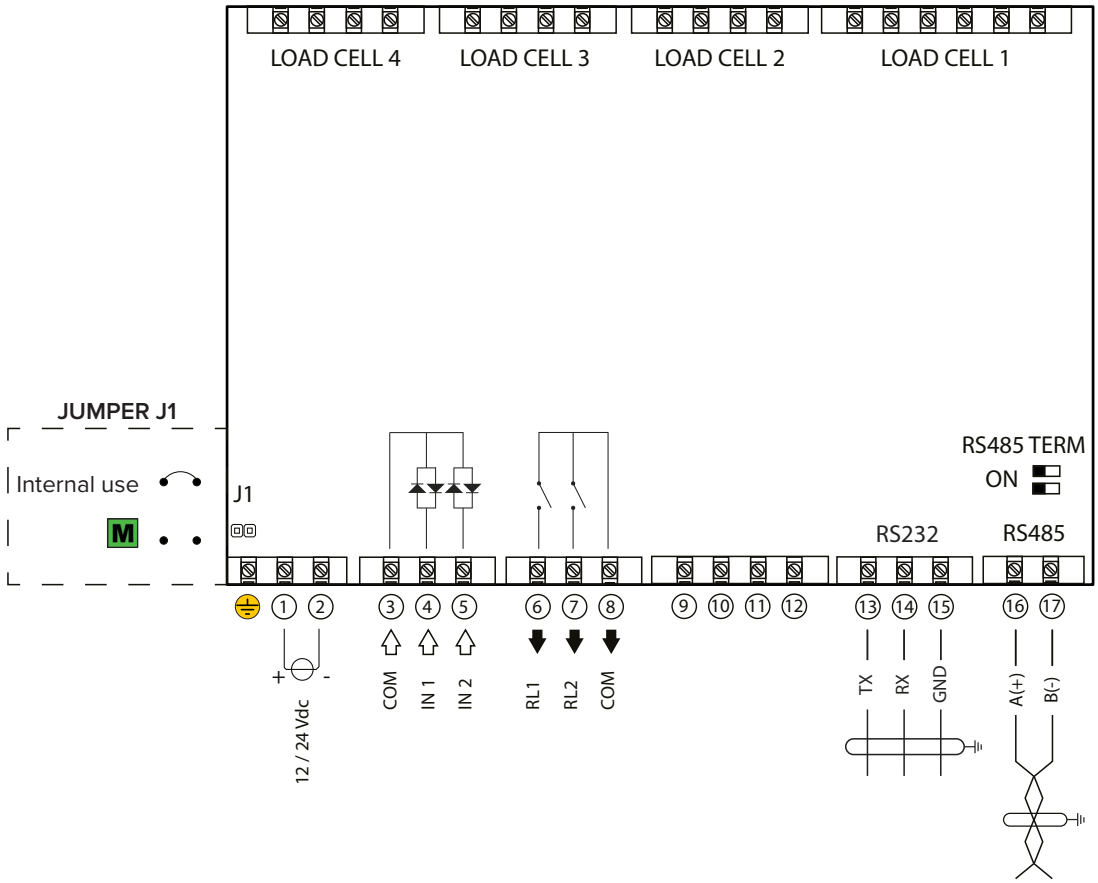
RL5416DC

Colour	Description
Red	Excitation +
Black	Excitation -
Green	A +
White	B -
Metal	Shield

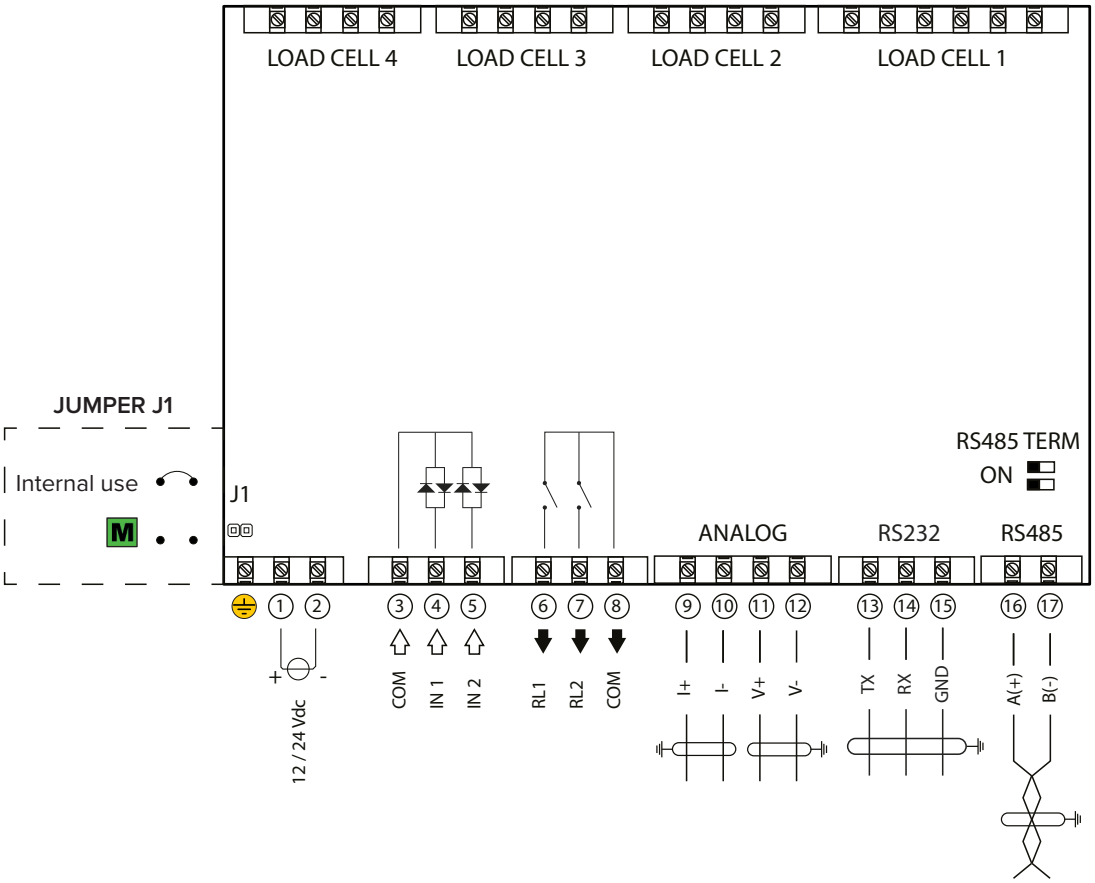
RL5426DC

Colour	Description
Red	Excitation +
Black	Excitation -
Green	A +
White	B -
Metal	Shield

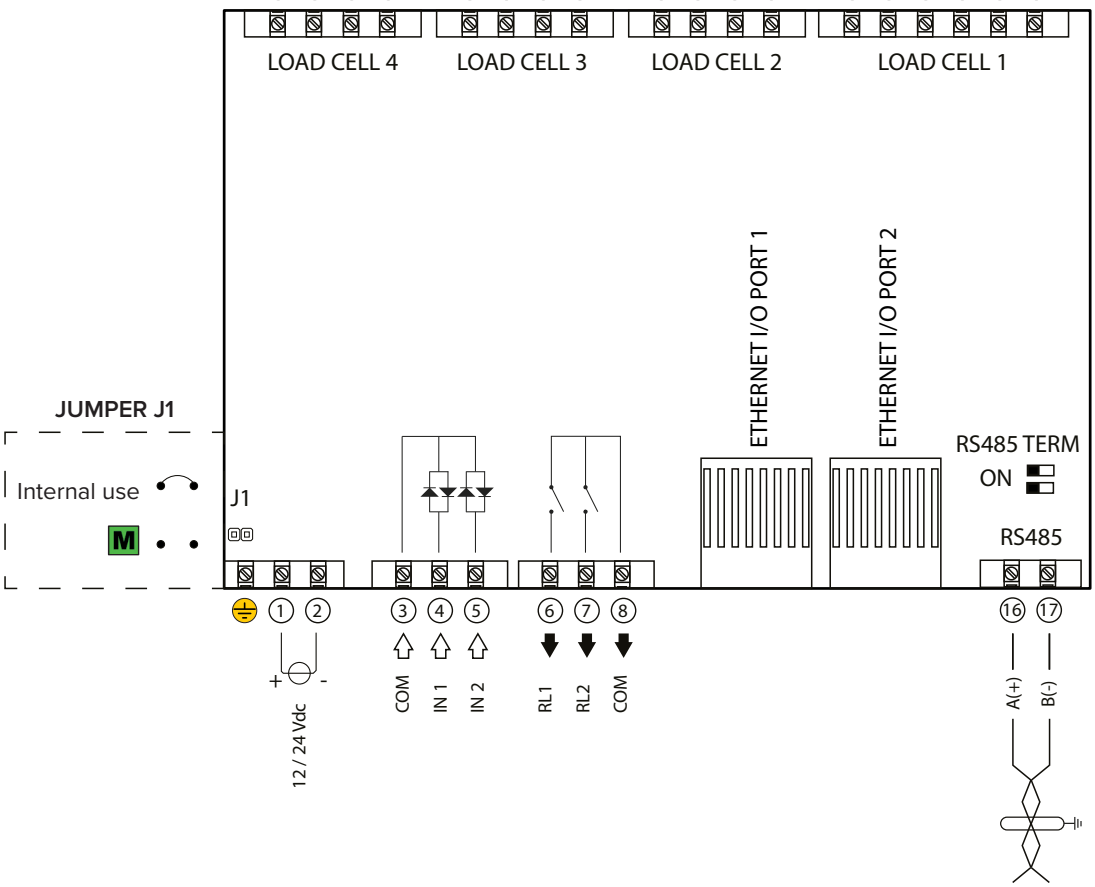
DGT4XDL



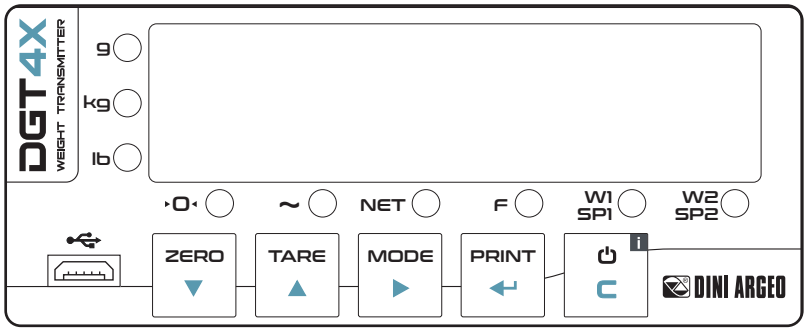
DGT4XDLAN



DGT4XDLPRONET



Display and function of the keys



Symbol	Description
▼	Semi-automatic zeroing. Decreases the selected digit.
▲	Semi-automatic tare. Increases the selected digit.
▶	Activates the function. Selects the digit to be changed.
↵	Confirms a value. Prints / Transmits data.
⊂	Reboots the transmitter.

Symbol	Description
→0←	Gross weight on zero.
~	Unstable weight.
NET	A tare is active.
F	A special function is active.
W1 SP1	Output 1 is active.
W2 SP2	Output 2 is active.

Advanced programming menu

The advanced menu contains all the transmitter configuration parameters for the most advanced adjustments.

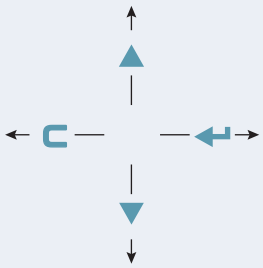
Access to the advanced menu and saving the changes

1. Reboot the transmitter.
2. Press the ▲ key when the display shows 888888.

HOW TO EXIT THE SETUP AND SAVE CHANGES

1. Press ⊏ several times, until the display shows "SAVE?".
2. Press ↵ to save or ⊏ to exit without saving.

Function of the keys in the menu



▲ Previous parameter.
▼ Next parameter.
↵ Access the parameter / confirm setting.
⊏ Exit a parameter (without saving).

FUNCTION OF THE KEYS WHEN ENTERING NUMBERS

▲ Increases the selected digit.
▼ Decreases the selected digit.
▶ Selects the next digit.
↵ Confirms the value.
⊏ Resets the value.
If pressed again, exits entering.

In the menu description on the following pages **the ▽ symbol indicates repeated pressing of the ▼ key** until the parameter indicated is reached.

Complete menu on pages **24 - 25**

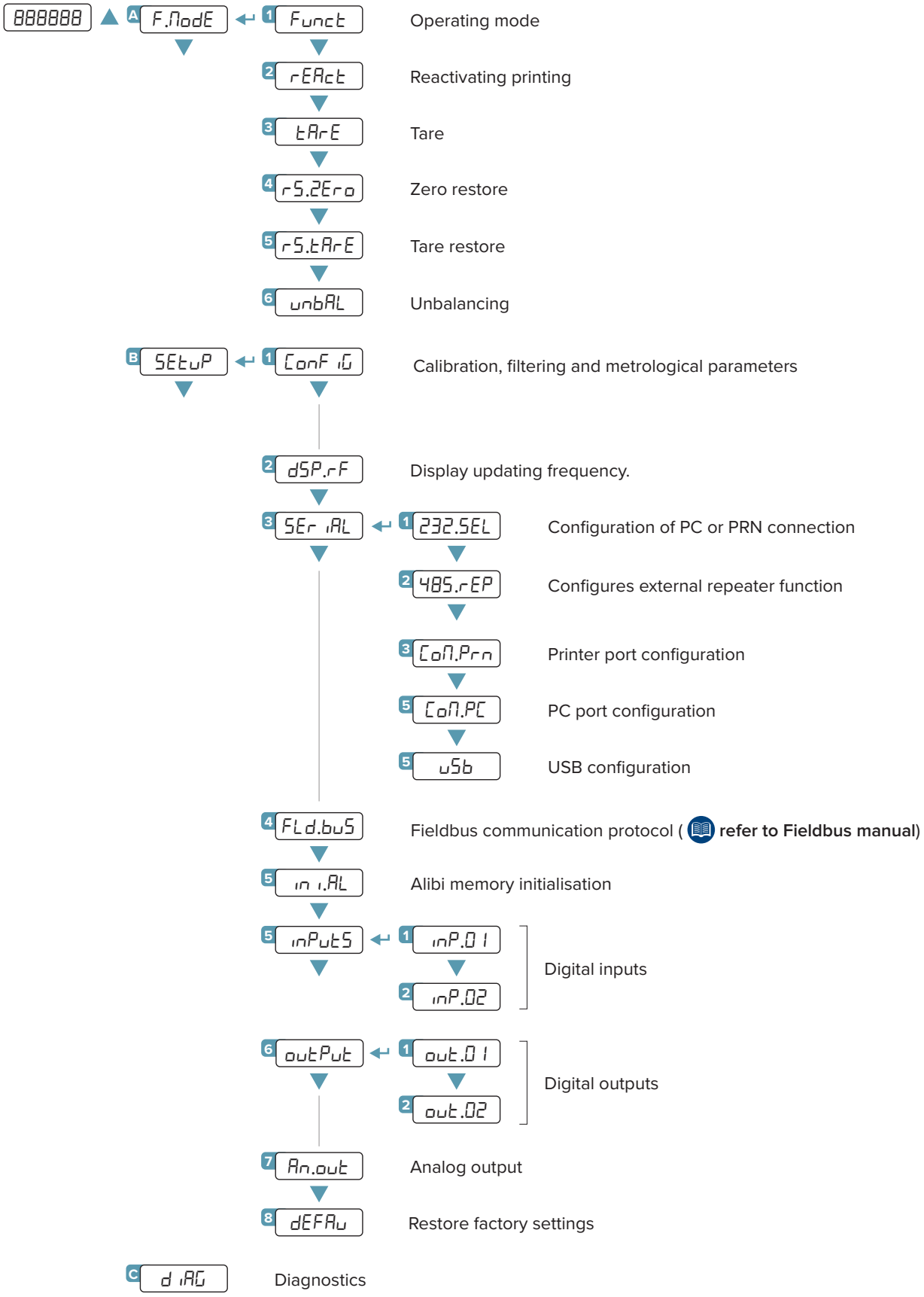
MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVE?. Press the ↵ key to confirm.

Menu Block diagram



LEGEND:

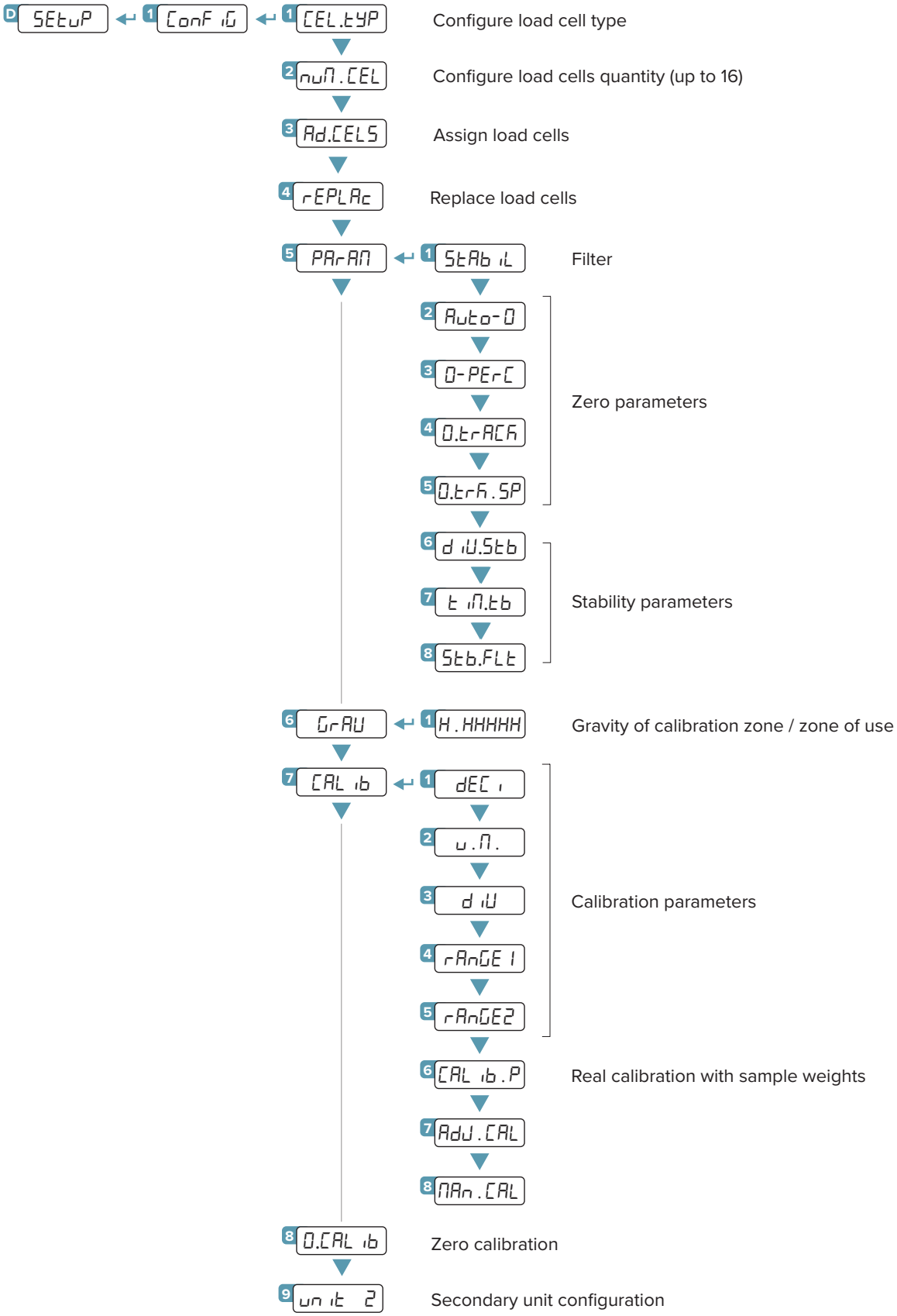
Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Full ConF iG ↵ SEtuP menu is displayed.



Complete menu on pages **24 - 25**

MENU ACCESS:

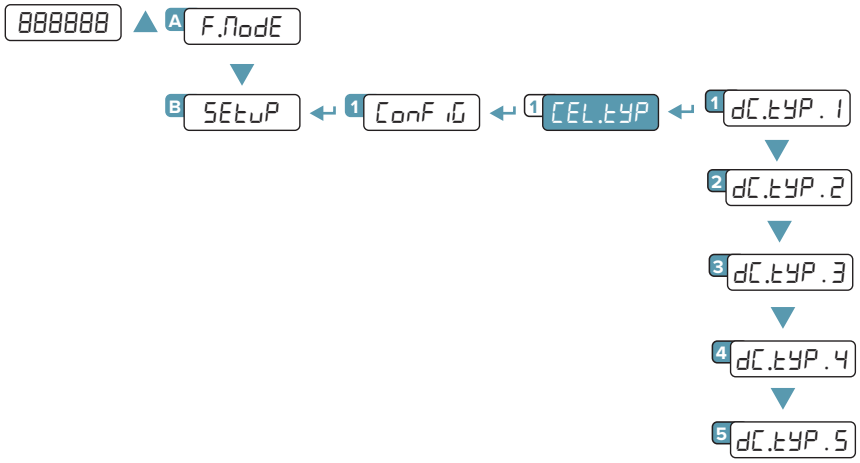
888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAUEP. *Press the ↵ key to confirm.*

Cell Type

Configure the type of cell connected to the instrument.



Parameter	Description
DC.TYP.1	RCD
DC.TYP.2	RCPTD-1
DC.TYP.3	-
DC.TYP.4	RL5416
DC.TYP.5	RL5426

1. Navigate to CEL.tYP.
2. Press ↵. dC.tYP.1 displays.
3. Press ▲ and ▼ until desired cell type displays.
4. Press ↵. num.CEL displays.

LEGEND:

▼ *Indicates repeated pressing of the ▼ key.*

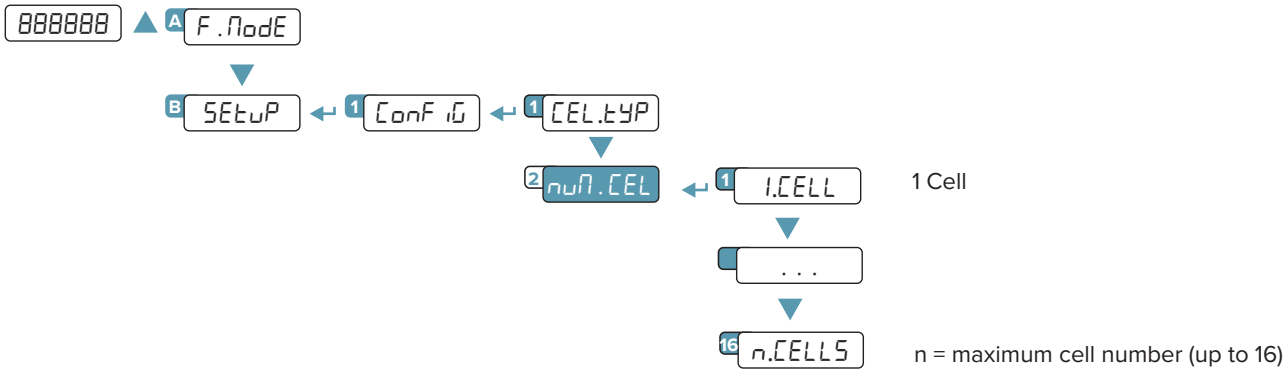
Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Cell Quantity

Configure the quantity of cells connected to the instrument (up to 16).



1. Navigate to nuM.CEL.
2. Press ↵. 1.CELL displays.
3. Press ▲ and ▼ until desired cell quantity displays.
4. Press ↵. Ad.CELLS displays.

Complete menu on pages **24 - 25**

MENU ACCESS:

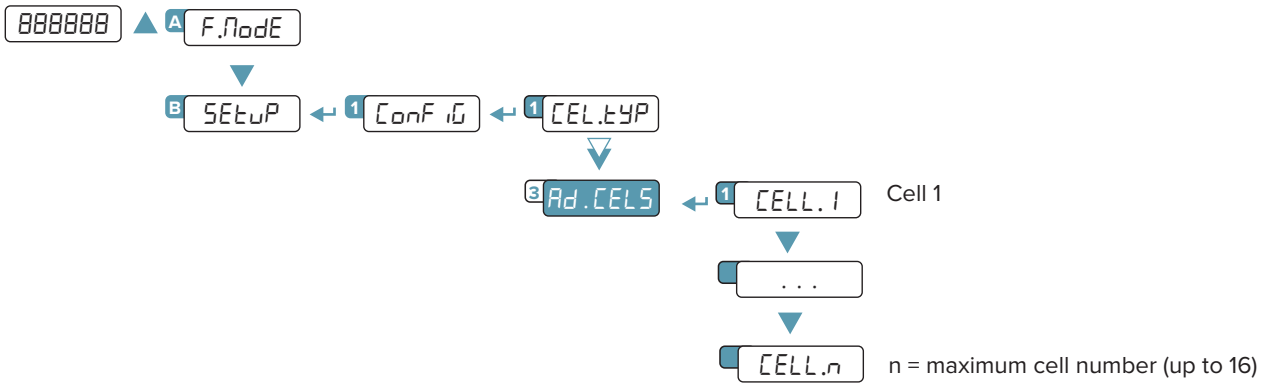
888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊂ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Adding RCD or RCPTD-1 Cells

When adding cells to the instrument ID numbers are assigned. RCD and RCPTD-1 are added to the instrument by using the serial numbers.



1. Connect cell to junction box.
2. Connect junction box to instrument.
3. Navigate to Ad.CELS menu and then press ↵. CELL . 1 displays.
4. SEr .nUP displays.
- Press ↵. 000000 displays with a character blinking.
- Use ▲, ▼, and ▶ to enter the serial number from the cell.
- Press ↵ to confirm the entered serial number.
- If the DGT4X accepts the serial number, CELL . 1 followed by oK 1 displays. The instrument then assigns the ID.
- CELL . 2 displays.

5. Press ↵ then repeat step 4 for next cell.
6. Repeat procedure for remaining load cells.
7. If there is an error, the DGT4X displays Error followed by rEtrY?.
8. Press ↵ to repeat step 4.

LEGEND:

Indicates repeated pressing of the ▼ key.

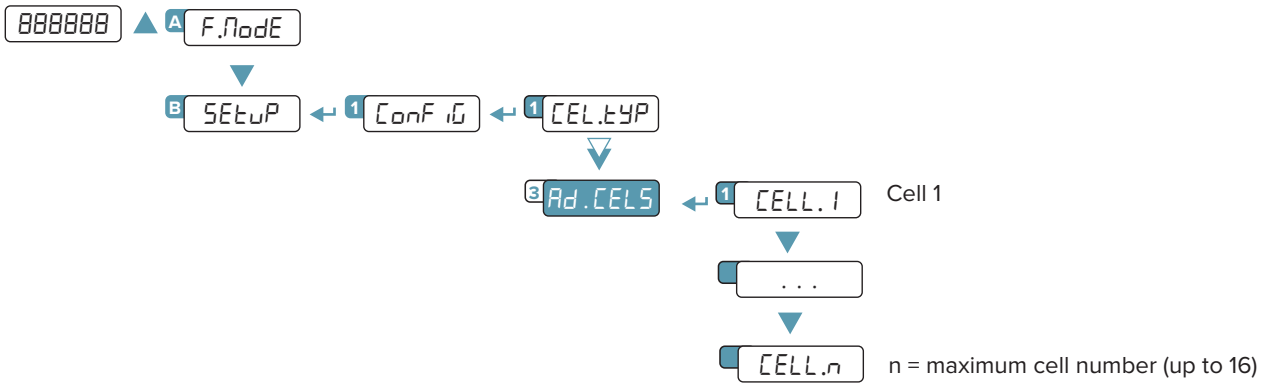
Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Adding RL5416 and RL5426 Cells

When adding cells to the instrument ID numbers are assigned. It is recommended during ID assignment to only connect one cell to the instrument and assign IDs sequentially (low to high). RL8749 and RL5426 ells are typically added to the instrument one at a time using their default channel number.



1. Connect first load cell to instrument.
2. Navigate to Ad.CEL5 menu and press ↵. CELL 1 displays.
3. Press ▲ and ▼ until the ID number you want to assign to the cell displays (in this example 1 is used for the first cell) then press ↵ to continue.
4. The DGT4X displays WAit. 1 and searches for a cell with ID 16 (default value).

- If found, it assigns the ID selected in step 4. DGT4X displays oK 1 and the procedure ends for this load cell.
- Disconnect current cell and connect next cell.
- Repeat procedure for remaining load cells.

5. If cell ID 16 is not found, Error displays followed by SCAnP.

- Press ↵ to scan all IDs (1 - 16). The DGT4X displays WAit. 1.
- if the cell has an ID between 1 and 16 the DGT4X displays oK 1, it then assigns the ID selected in step 4 (in this example CEL 1) and the procedure ends for this load cell.
- Disconnect current cell and connect next cell.
- Repeat procedure for remaining load cells.

6. If no cell is found, Error displays followed by "rEtrY?".

- Press ↵ to restart scanning all IDs. The DGT4X displays WAit. 1
- if the cell has an ID between 1 and 16 the DGT4X displays oK 1, it then assigns the ID selected in step 4 (in this example CEL 1) and the procedure ends for this load cell.
- Disconnect current cell and connect next cell.
- Repeat procedure for remaining load cells.

i The default ID is 16 for new RL5416 and RL5426 cels. While serial numbers are the default ID numbers for RCD and RCPTD-1.

Complete menu on pages **24 - 25**

MENU ACCESS:

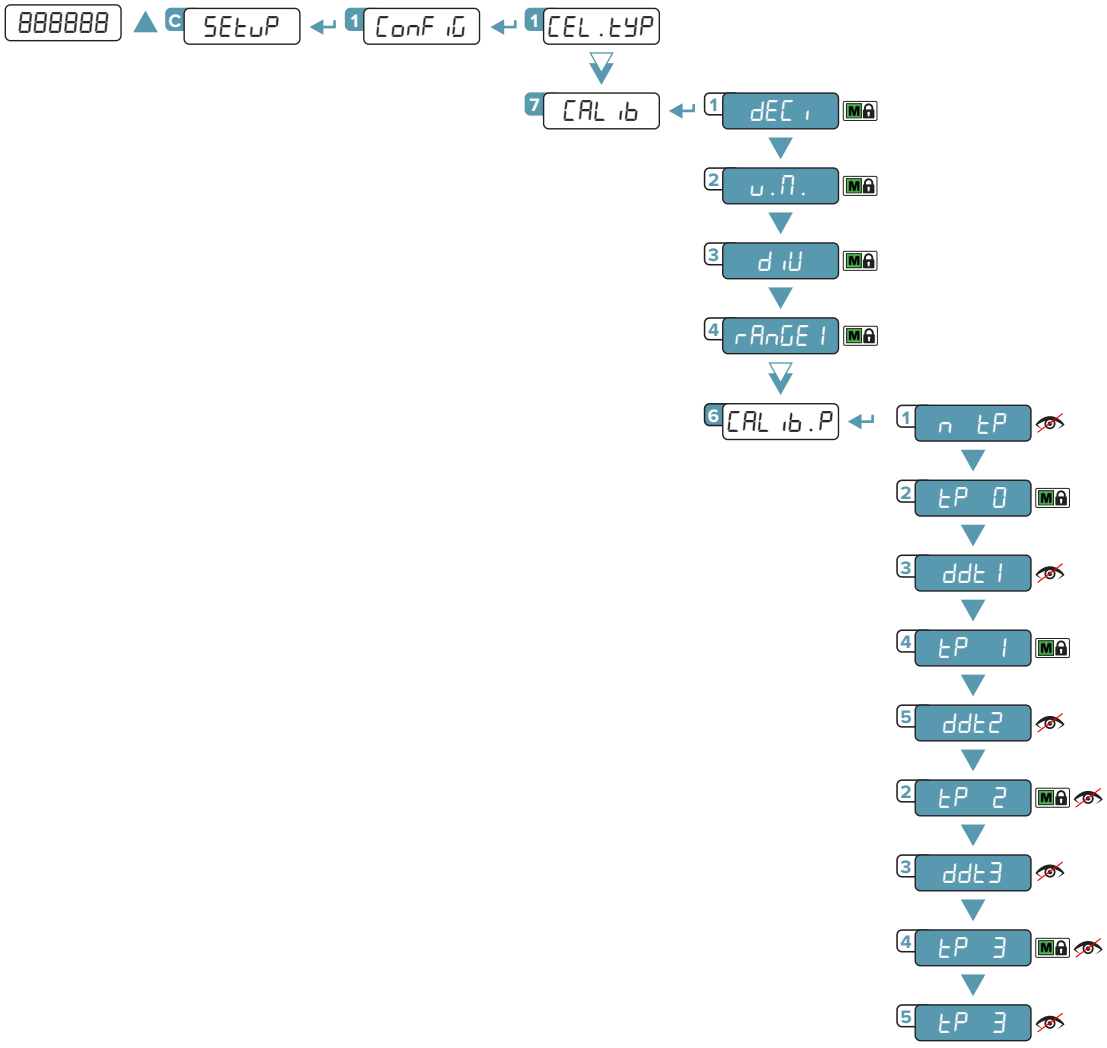
888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAUEP. *Press the ↵ key to confirm.*

Calibration

Digital load cells are calibrated by the manufacturer, however, it possible to perform calibration.



CALIBRATION PROCEDURE:

1. Set the calibration parameters:

- dEC i = Number of decimals.
- u.M. = Unit of measurement (KG, G, t, Lb).
- d iU = Minimum division.
- rAnGE 1 = Maximum range.

2. Acquire the calibration points *(continued on next page)*

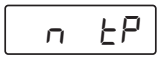
LEGEND:

Indicates repeated pressing of the ▼ key. — *Parameter visible only under certain conditions.* — *Parameter or menu subject to approval.* — *Default value of the parameter.*

4. Acquire the calibration points:

A

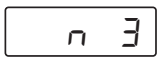
Display View:



press

B

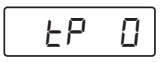
Display View:



Press ↵ and select the number of calibration points using the ▼ and ▲ keys (from 1 to 3). To confirm press

C

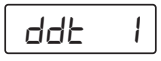
Display View:



Unload the scale.
To acquire the zero point press

D

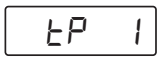
Display View:



Press ↵ and enter the value of the first sample weight using the ▼, ▲ and ▶ keys. To confirm press

E

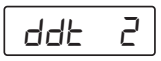
Display View:



Load the scale with the first sample weight and press

F

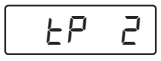
Display View:



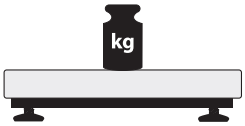
Press ↵ and enter the value of the second sample weight using the ▼, ▲ and ▶ keys. To confirm press

G

Display View:

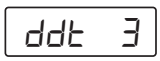


Load the scale with the second sample weight and press



H

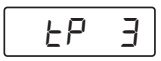
Display View:



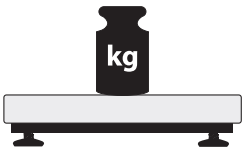
Press ↵ and enter the value of the third sample weight using the ▼, ▲ and ▶ keys. To confirm press

I

Display View:



Load the scale with the third sample weight and press



i For successful calibration, the value of the largest sample weight must be at least 50% of the capacity.

Complete menu on pages **24 - 25**

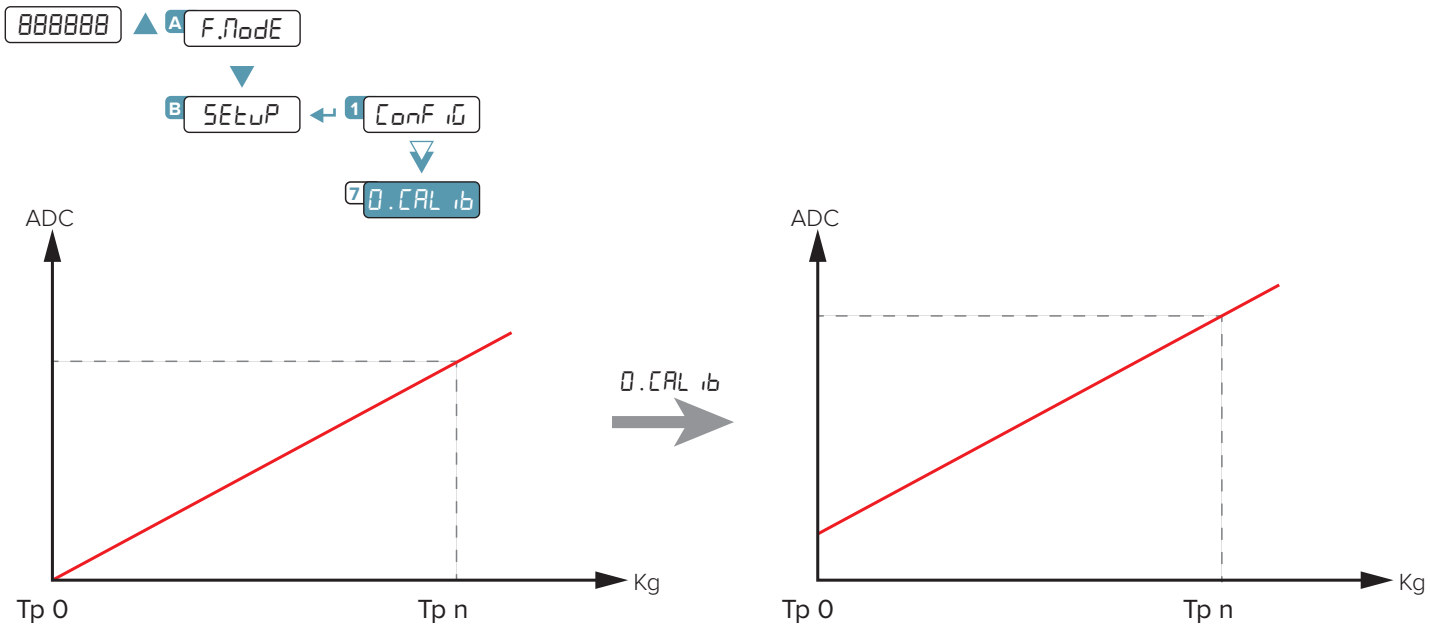
MENU ACCESS:

Press the ▲ key during the start-up procedure.

SAVING THE PARAMETERS:

Press the ⊂ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Quick zero calibration (pre-tare reset)



LEGEND:

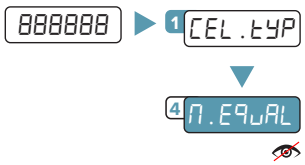
Indicates repeated pressing of the ▼ key.

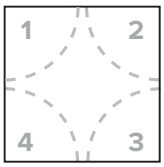
Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Manual Equalization





Load the weight * so it rests as much as possible only **during associated cell adjustment**

1. Unload all weight from scale.
2. Place a calibrated test weight centred on the location of cell 1.
3. Navigate to M.EQUAL then press ↵.
4. Press ▲ and ▼ until the cell number you want to adjust displays and then press ↵ to continue.
5. The current weight reading displays.
6. Press ▲ or ▼ to adjust the until the value is correct and then press ↵ to continue.
7. Press ⊏. The previously selected cell displays.
8. Repeat Steps 4 through 7 for remaining cells.
9. Exit setup and return to weigh mode.
10. Place weight at centre of platform and confirm weight is correct.
11. If incorrect, repeat the procedure.

i The DGT4X briefly displays LOA.WGT and exits if there is no weight on a cell when starting M.EQUAL. To resolve the issue, add weight to the scale then reopen M.EQUAL.

* For successful equalisation, it is advisable to use a compact weight with as small a supporting surface as possible, so that it rests as much as possible on only one cell. The weight value must be at least 20% of the capacity.

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

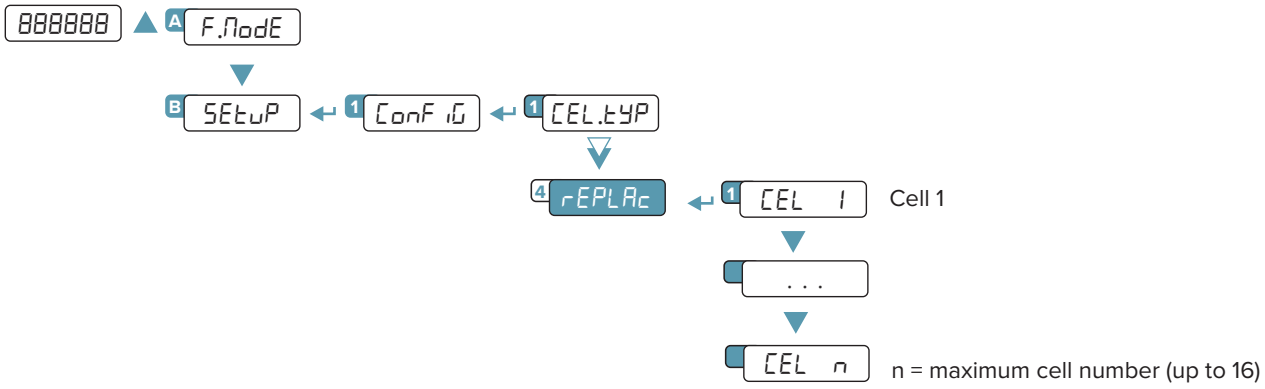
SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVE?. *Press the ↵ key to confirm.*

Replace Cells

If a cell is replaced, the previously used ID number must be assigned to the new cell.

RCD or RCPTD-1 Cells



1. Connect junction box to instrument then connect the cell to the connector of the cell being replaced.
2. Navigate to rEPLAC menu and press ↵. CEL 1 displays.
3. Press ▲ and ▼ until the ID number you want to assign to the cell displays then press ↵ to continue.

4. SEr.nUP displays.

- Press ↵. 000000 displays with a character blinking.
- Use ▲, ▼, and ▶ to enter the serial number from the cell.
- Press ↵ to confirm the entered serial number.
- If the DGT4X accepts the serial number, CELL. 1 followed by oK 1 displays. The instrument then assigns the ID.
- PArAM displays.

5. Repeat procedure for remaining load cells.
6. If there is an error, the DGT4X displays Error followed by rEtrY?.
7. Press ↵ to repeat step 4.

LEGEND:

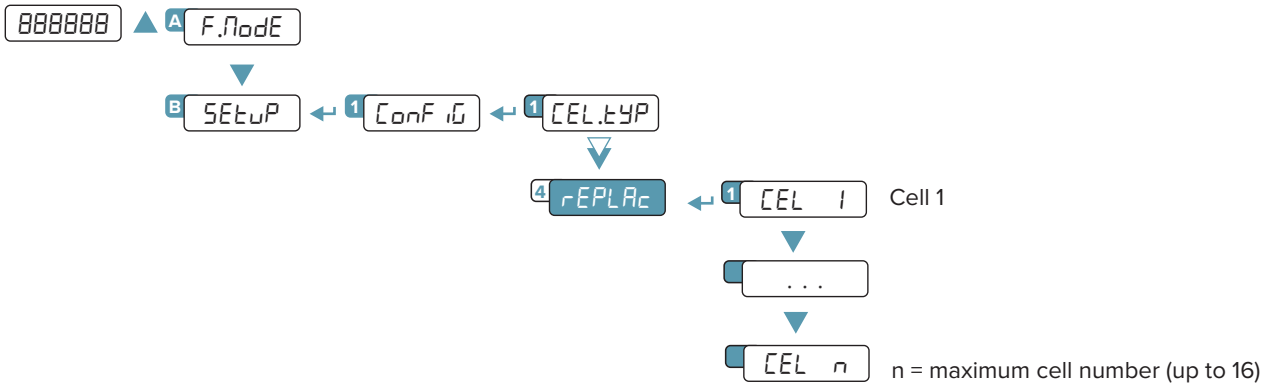
▼ *Indicates repeated pressing of the ▼ key.*

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

RL5416 and RL5426 Cells



1. Disconnect cells from instrument.
2. Connect the replacement load cell to instrument.:
3. Navigate to rEPLAC menu and press ↵. CEL 1 displays.
4. Press ▲ and ▼ until the ID number you want to assign to the cell displays then press ↵ to continue.
5. The DGT4X displays WAit. 1 and searches for a cell with ID 16 (default value).

- If found, it assigns the ID selected in step 4. DGT4X displays oK 1 and the procedure ends for this load cell.
- Repeat procedure for remaining load cells.

6. If cell ID 16 is not found, Error displays followed by SCAnP.

- Press ↵ to scan all IDs (1 - 16). The DGT4X displays WAit. 1.
- DGT4X displays oK 1 if the cell has an ID between 1 and 16, it then assigns the ID selected in step 4 (in this example CEL 1) and the procedure ends for this load cell.
- Repeat procedure for remaining load cells.

7. If no cell is found, Error displays followed by "rEtrY?".

- Press ↵ to restart scanning all IDs. The DGT4X displays WAit. 1
- DGT4X displays oK 1 if the cell has an ID between 1 and 16, it then assigns the ID selected in step 4 (in this example CEL 1) and the procedure ends for this load cell.
- Repeat procedure for remaining load cells.

i

The default ID is 16 for new RL5416 and RL5426 cells. While serial numbers are the default ID numbers for RCD and RCPTD-1.

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

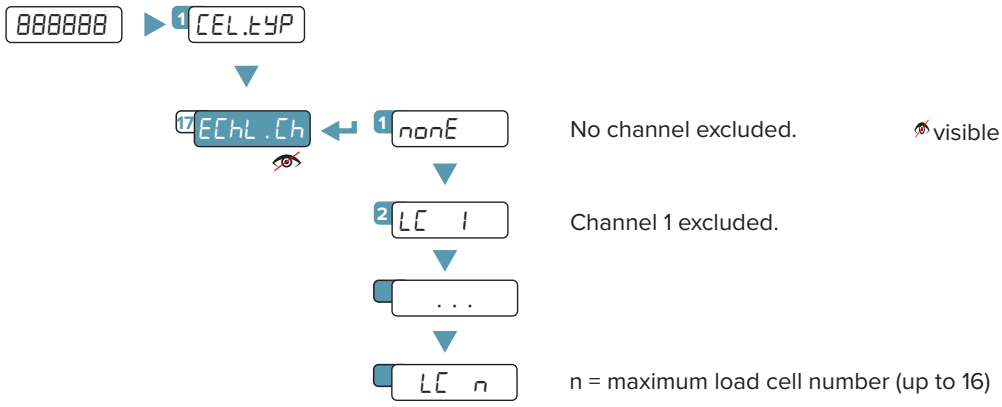
SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Exclude Load Cell

If a load cell is broken, it's possible to temporarily exclude one cell where it is connected and continue to weigh, pending replacement.

WARNING: This operation reduces the accuracy of the weighing system. We recommend use for liquid weighing or in applications where the load is evenly distributed. Only one load cell may be excluded.



Cell exclusion procedure:

1. Navigate to ECHL.CH then press ↵.
2. Press ▲ and ▼ until the cell number you want to exclude displays, then press ↵.

3. FILTER displays. The selected load cell is excluded.

To disable exclusion:

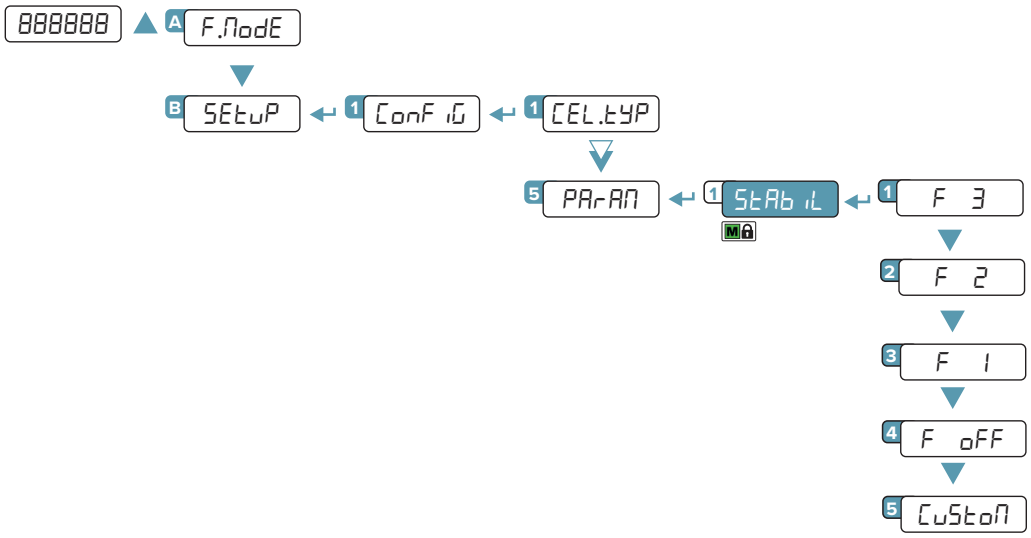
1. Navigate to ECHL.CH then press ↵.
2. Press ▲ and ▼ until nonE displays, then press ↵.

3. FILTER displays. The exclusion feature is disabled.

LEGEND:

Indicates repeated pressing of the ▼ key. | *Parameter visible only under certain conditions.* | *Parameter or menu subject to approval.* | *Default value of the parameter.*

Filter adjustment



Filter	Description
F OFF	Disables filter
F 1	Average of 2 Elements
F 2	Average of 4 Elements
F 3	Average of 8 Elements
CuStoM	For manufacturer use only

In the case of an approved transmitter, it is possible to select filters F OFF, F 1, F2, and F3.

Complete menu on pages **24 - 25**

MENU ACCESS:

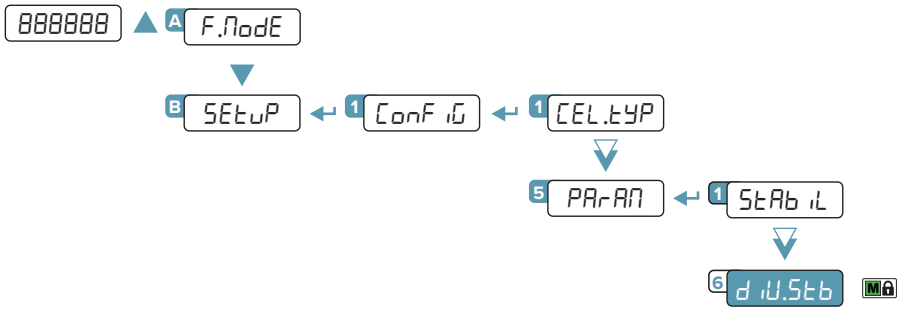
888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊂ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Stability detection sensitivity

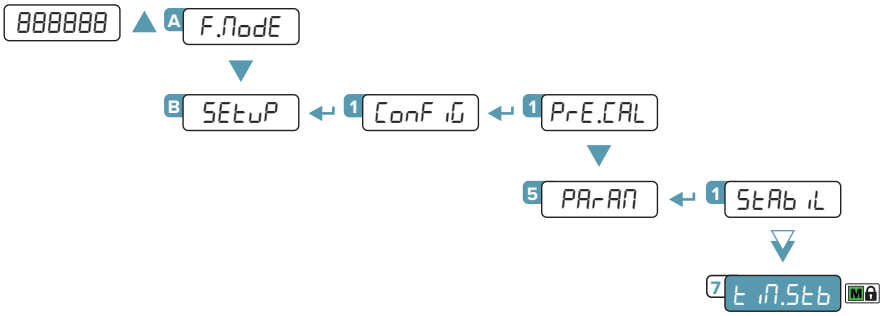
It is possible to decide that tare, zero and print functions (from keypad or serial command / PLC) are performed only if the weight is stable.



The value 0 disables the stability control.
By entering a value other than 0, you enable stability control.
Enter the number of deviation divisions beyond which the transmitter detects instability.

From 0 to 99.
⚙ = 02.
M = 02.

Stability detection time



If the weight remains within the number of divisions set in d iU.Stb for the time set in this parameter, the weight is stable.
Enter the value in ms. In case of approved transmitter, the value is fixed at 500 ms.

from 10 to 10000.
500. M
⚙ = 500.

LEGEND:

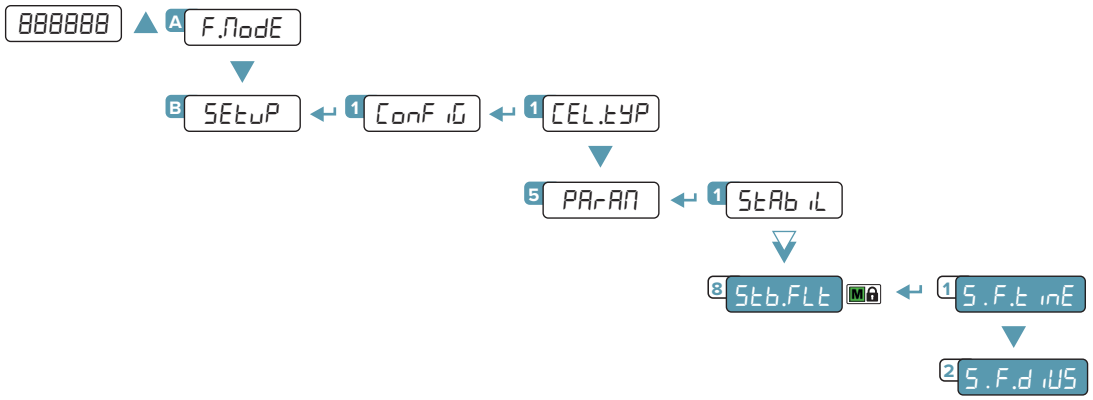
Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Additional filter for stability detection



from 0 to 2000.
0.
⚙ = 0.
M

from 0 to 100.
0.
⚙ = 0.
M

Additional filter that locks the weight if it oscillates around a value for a maximum of 10 divisions. The weight is unlocked if the value increases/decreases for the number of divsions set in the parameter S.T.DIVS for a time value greater than the time set in the parameter S.T.TIME.
The value 0 disables the filter.

Complete menu on pages **24 - 25**

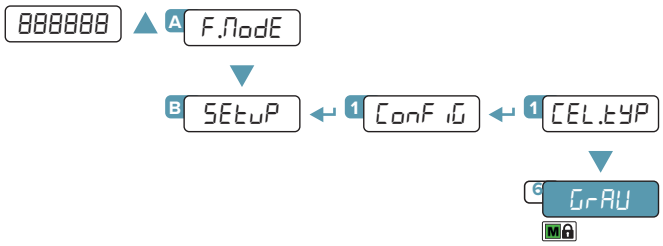
MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Gravity

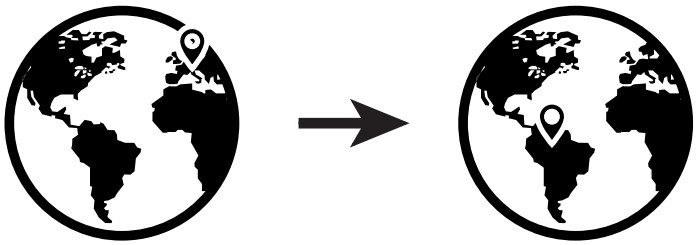


From 9.7500 1 to 9.84999.
⚙ = 9.80543.

This parameter allows you to correct the gravity acceleration value.
Before calibration, set the value of the calibration zone.
Next, set this value to the value of the zone of use.
Any difference between the two values will be automatically compensated.

i In the case of an approved transmitter, the value is read-only.

EXAMPLE:



Calibration zone
Italy
g = 9.80543

Zone of use
Brazil
g = 9.77623

1. Before calibration, in the GrAU parameter enter the value 9.80543.

2. Calibrate the transmitter.

3. Before using the transmitter, in the GrAU parameter enter the value 9.77623.

LEGEND:

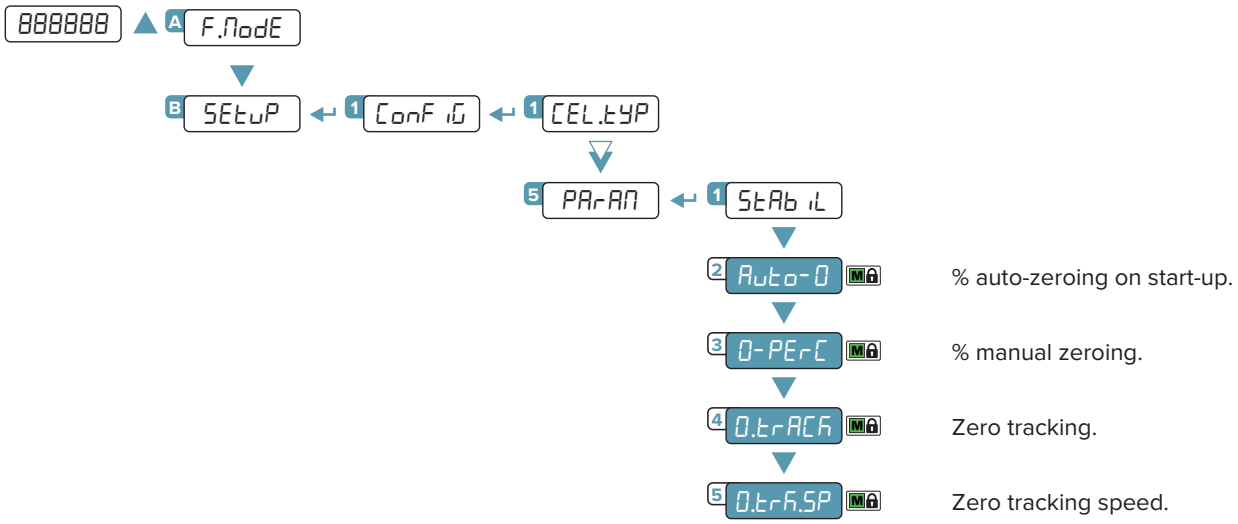
Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

⚙ *Default value of the parameter.*

Zero functions and parameters



Auto-zeroing on start-up

2 Auto-0 ← 1 d iSAb ⚙ Disabled.

2 EnAb ← 1 C.PErC Enabled, enter in C.PErC the % value of the capacity. from 0 to 50%. from 0 to 10%. **M**

Maximum percentage of manual zeroing

3 0-PErc ← Indicates the weight value that can be zeroed by key or command. The value is expressed as % of the full scale. For example: if the scale has a full scale (RANGE1) of 1000 kg, by setting 3% it is possible to zero up to 30 kg. The value 0 disables the ZERO key and the zeroing commands.

from 0 to 50%. from 0 to 2%. **M** ⚙ = 2%.

Zero tracking

This menu allows to set zero tracking, i.e. the compensation parameter of the thermal drift of the scale; the set value corresponds to the number of divisions that is reset to zero in the time set in the parameter 0.trk.SP.

4 0.trACk ←

1 tr 10 — 10 divisions.
2 tr 8 — 8 divisions.
3 tr 6 — 6 divisions.
4 tr 4 — 4 divisions.
5 tr 2 — 2 divisions.
6 tr 1 — 1 division.
7 tr 1/2 ⚙ — 1/2 division.
8 tr 1/4 — 1/4 division.
9 tr no — Tracking disabled.

i In the case of an approved transmitter, it is possible to select the values tr 1/2, tr 1/4, tr no.

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Zero tracking speed

5 0.trA.SP ↵

It indicates the value of time that elapses from when the instrument detects stability to when zero tracking takes effect.
The value is expressed in ms.

from 100 to 5000.
from 1000. M
⚙ = 1000.

Restoring zero

888888 ▲ A F.ModE ↵ 1 FunCt

▽

4 rS.2Ero ↵ d iSAb ⚙

▼

EnAb

Zero restoring disabled.

Zero restoring enabled.
• If Auto.0 = d iSAb:
The last zero in the memory before turning off the power is always restored.
• If Auto.0 = EnAb:
The last zero in the memory before turning off the power is restored only if the auto-zeroing fails.

Semi-automatic zeroing

By pressing the ▼ key, or sending the zero command, the transmitter zeroes the gross weight on the scale. For a moment the display shows "2Ero" and then it shows 0 (gross weight).

The semi-automatic zeroing cannot be performed if:
- The weight on the scale is greater than the zero capacity (0.PErC).
- The weight is unstable.

LEGEND:

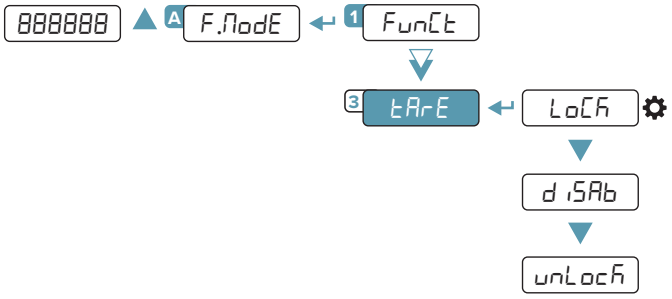
▽ *Indicates repeated pressing of the ▼ key.*

Parameter visible only under certain conditions.

M *Parameter or menu subject to approval.*

⚙ *Default value of the parameter.*

Tare mode



Tare blocked. When the gross weight drops to 0, the tare remains engaged.

Tare disabled.

Tare unlocked. When the gross weight drops to 0, the tare is cleared.

Semi-automatic tare

By pressing the ▲ key, or sending the tare command, the transmitter sets as tare the weight on the scale. For a moment the display shows "tArE" and then it shows 0 (net weight). The **NET** light indicates that the net weight is shown on the display.

The semi-automatic tare cannot be performed if:
- The weight is less than one division.
- The weight is overloaded.

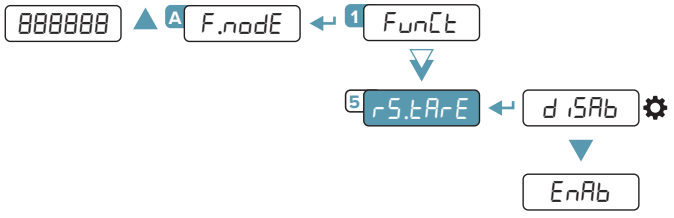
Predetermined tare

By holding down the ▲ key, or by means of the predetermined tare command, it is possible to enter a tare value manually.
For a moment the display shows "-tN-" and shows the tare present (or 0 if no tare is present).
Enter the tare value and press ↵ to confirm.

Clearing tares

Tare can be cleared in different ways:
- By unloading the scale and performing a semi-automatic tare.
- By entering a predetermined tare value of 0.
- If the weight is negative, pressing the ▼ key.

Restoring a tare



Restoring tare disabled.

Restoring tare enabled. When restarting, the last tare in the memory before turning off the power is restored.

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

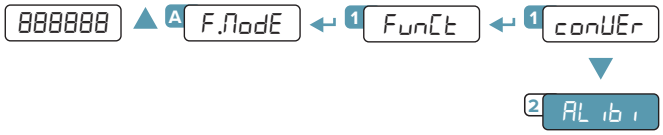
SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Alibi memory

The alibi memory allows you to store the weight values transmitted to the computer for further processing and/or data integration. The stored values can then be retrieved from the PC port or directly on the display of the transmitter for later checking.

Enabling the alibi memory



Saving a weighing operation in the alibi memory

A weighing operation is stored after receiving the **PID** serial command (see **"Serial commands" page 57**) or after pressing the ↵ key. The transmitter transmits on the PC port the gross weight, the tare and an ID code that uniquely identifies the weighing. The ID has the following format:
• rewrite number: 5-digit number (from 00000 to 00255) indicating the number of complete rewrites;
• weighing number: 6-digit number (from 000000 to 131072) indicating the weighing number in the current rewrite.
Each time it is saved, the weighing number is increased by 1; when it reaches the value 131072, it starts again from 000000 and the rewrite number is increased by 1.

Example
If the weighing that has been saved is as follows:

PIDST,1, 1.000kg, 1.000kg,00126-131072

The next one will be:

PIDST,1, 1.000kg, 1.000kg,00127-000000

A weighing operation can only be saved if the weight ≥ 0, stable and valid (not underloaded or overloaded).
To store the weighing operation by key, the function must be active (see **"Reactivating printing" on page 52**).
In addition, if the transmitter is approved, the weight must exceed 20 divisions.

If these conditions are not met:
• the response to the PID command will have "NO" instead of the ID (**PIDST,1, 1.000kg, 1.000kg,NO**);
• there is no transmission when the ↵ key is pressed.

LEGEND:

Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Reading the alibi memory

FROM THE TRANSMITTER (MANUAL)

By pressing the ▶ key you can read a saved weight:
you will be asked to enter the rewrite number "rEW. id" (from 0 to 255) and the ID number " id" (from 0 to 131072).
The weighing data are shown. Use the ▼ and ▲ keys to scroll through the following information:

- "Ch. X", where X indicates the scale number.
- "uM YY", where YY indicates the unit of measurement (kG, G, t or Lb).
- "Gross", followed by the gross weight.
- "tArE / tArEPt", followed by the tare value.

Press the ⊏ key to return to weighing.

The weighing of an ID can only be verified if:
• it has a rewrite number equal to the current alibi memory number and a weighing number ≤ the last value received with the PID command;
• it has a rewrite number ≥ 0, but 1 less than the current alibi memory value, and a weighing number greater than the last value received with the PID command.

FROM PC

To read a weighing operation from a PC, see the serial command **"READING A WEIGHING OPERATION IN THE ALIBI MEMORY"** on page 57.

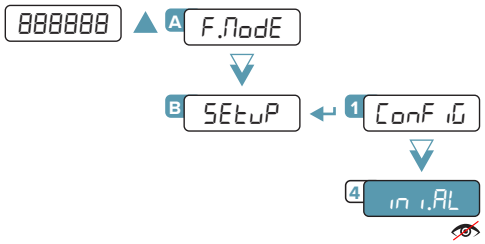
FROM PLC

To read a weighing operation from a PLC, refer to the Modbus and Fieldbus protocol manuals.

i

If the alibi memory is empty, when the ▶ key is pressed the display shows "EMPtY" for one second and returns to weighing mode.
If an invalid ID is entered, the display shows "no id" and returns to weighing mode.

Initialising the alibi memory



Not visible if the transmitter is approved.

i

This operation deletes all saved weighing operations; it is not possible to delete a weighing operation individually.

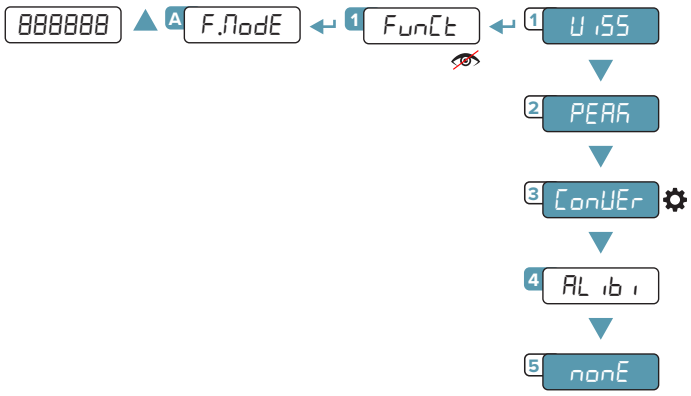
Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*



Not visible if tYPE = ind.Ch *and* nChAn > 1.

High resolution

U.SS

Weight display in high resolution (x10). Press the ▶ key to activate or deactivate the function.
When the weight is displayed in high resolution, the F light is lit.
In the case of an approved transmitter, the high-resolution weight display is automatically deactivated after 5 seconds.

Peak detection

PEAK

Detection of the maximum weight value during a time interval. Press the ▶ key to activate the function. The display shows "-PEAK-" every 5 sec and the transmitter shows the maximum weight reached since the function was activated.
To deactivate the function press the ▶ again, the display shows "PEAKoF" for a moment and shows the instantaneous weight again.

Converting units of measurement

ConUEr

Converting the scale unit of measurement using a free conversion factor. Press the ▶ key to convert the weight to pounds. By holding down the ▶ key, you can enter a free conversion factor, which will be multiplied by the weight.
Example: to make the display show the cubic meters of water on the scale, enter the value 997 as the conversion factor.
The ▶ key can be used to switch from the main unit of measurement to the secondary unit at any time.
When the secondary unit of measurement is displayed, the F light is lit.

Alibi memory

AL.ib.1

(See section **"Alibi memory" page 42**).

No function

nonE

No function when the ▶ key is pressed.

LEGEND:

Indicates repeated pressing of the ▼ key.

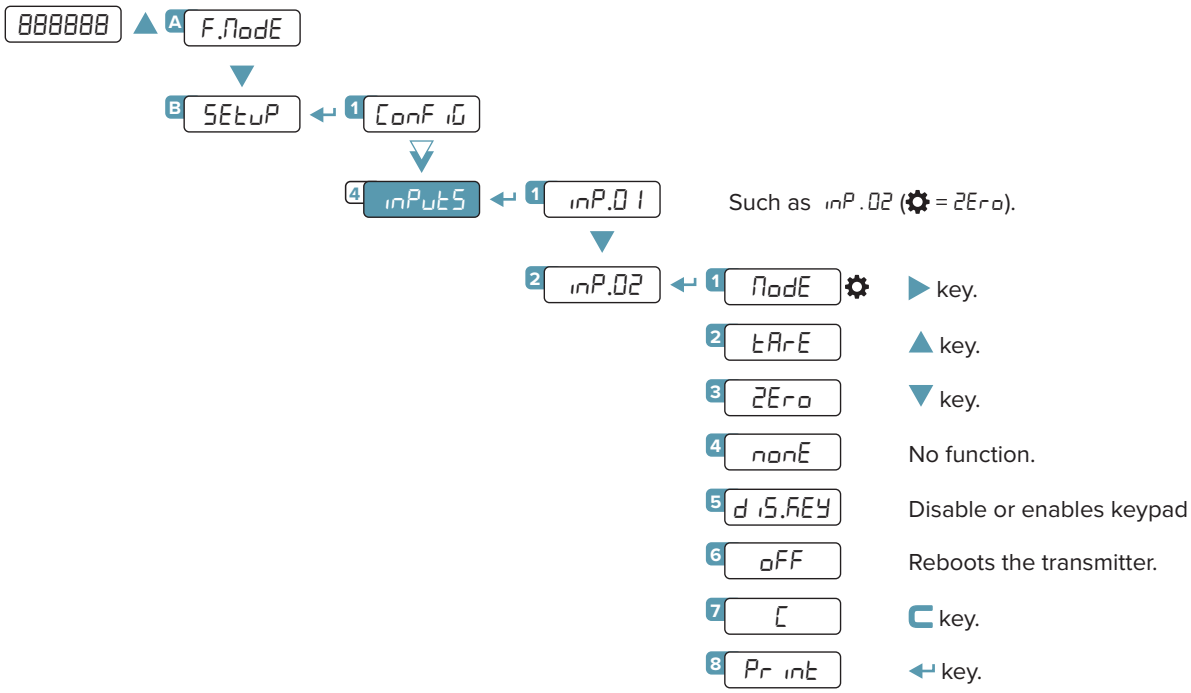
Parameter visible only under certain conditions.

Parameter or menu subject to approval.

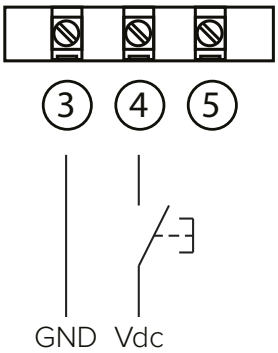
Default value of the parameter.

Input configuration

The indicator has 2 configurable inputs (bidirectional optocouplers).



INPUT CONNECTION:



i The input is activated when there is a potential difference between terminals 4 - 5 (IN1 and IN2) and terminal 3 (INCOM). The inputs are bidirectional, therefore it is possible to invert GND and VDC.

Complete menu on pages **24 - 25**

MENU ACCESS:

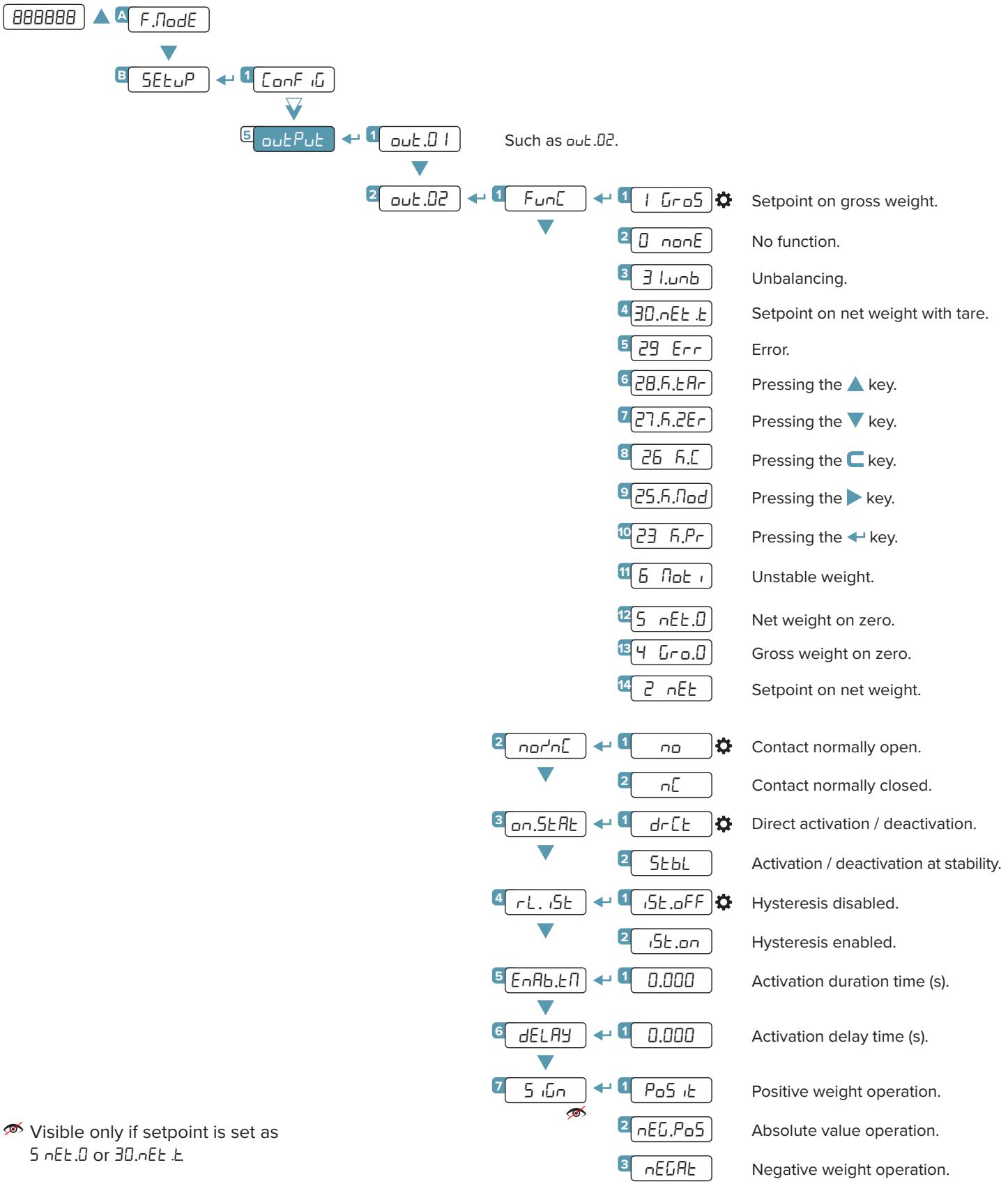
888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Output configuration

The indicator has 2 programmable outputs (photomosfet).



Visible only if setpoint is set as 5 nEt.0 or 30.nEt.t

LEGEND:

Indicates repeated pressing of the ▼ key.

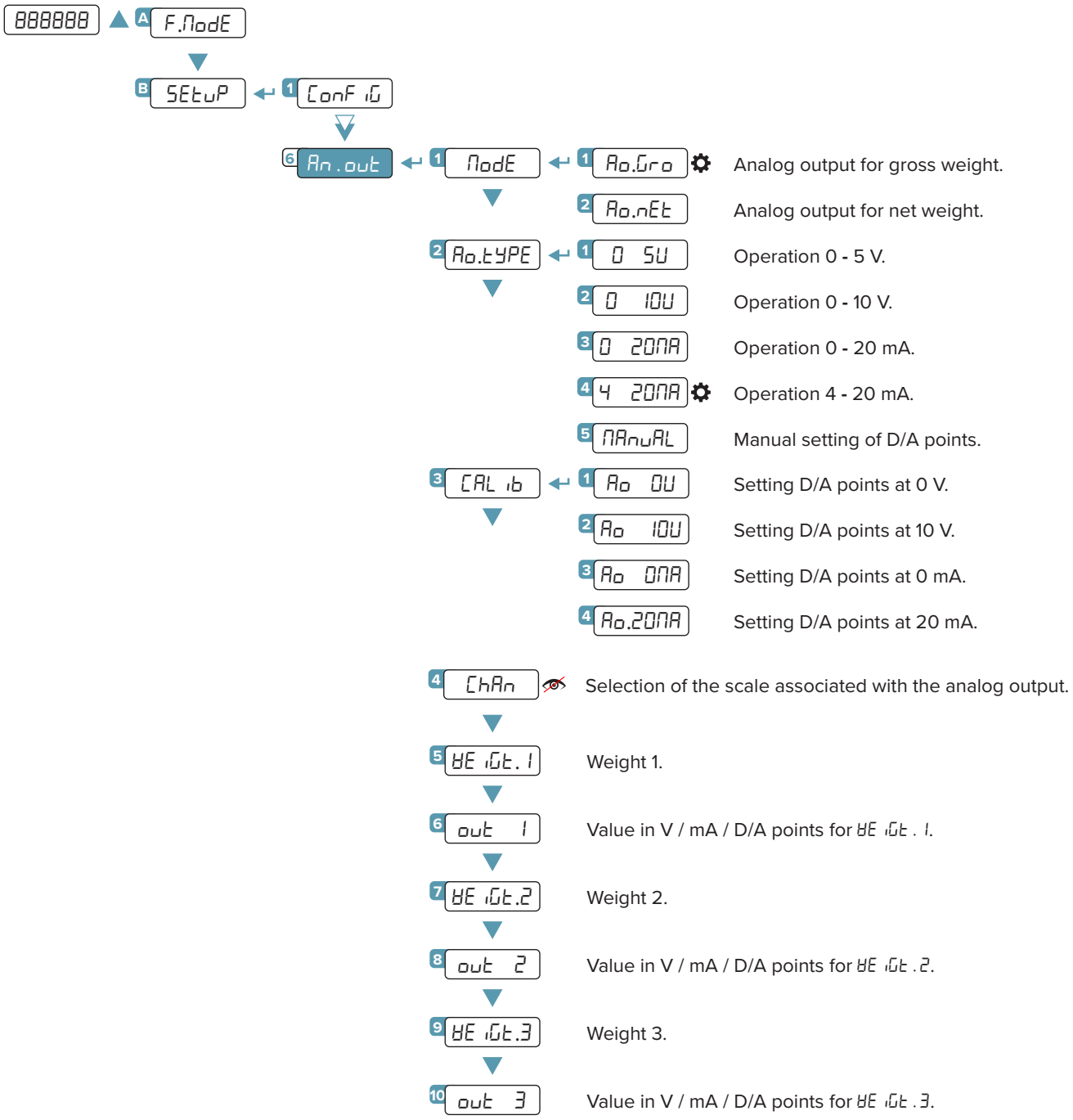
Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Analog output configuration

The DGT4XAN model has an analog output in voltage (0 - 5 / 0 - 10 Vdc) or current (4 - 20 / 0 - 20 mA).



i

This menu allows an advanced configuration of the analog output.

For simple configurations, it is recommended to use the quick menu (Ref. **Quick Start Guide**).

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

CALIBRATION PROCEDURE:

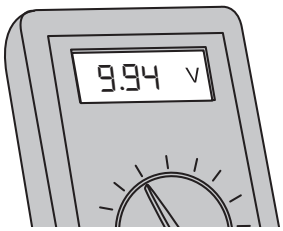
A

Connect a multimeter to the transmitter.
Enter the parameter to be changed:
Ao 0U / Ao 10U / Ao 0mA / Ao.20mA
and set an approximate value.

Voltage output	Current output
63300 ~ 10 V	58200 ~ 20 mA
0 ~ 0 V	0 ~ 0 mA

B

Press ↵ to update the output value on the multimeter.



C

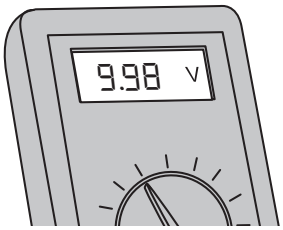
Increase or decrease the D/A points value to reach the desired output.

100 D/A points ~ 0.015 V - 0.035 mA
1000 D/A points ~ 0.15 V - 0.35 mA

Example:
Increase [Ao 10U] from 63300 to 63550.

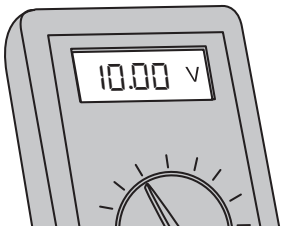
D

Press ↵ to update the output value on the multimeter.



E

Repeat the procedure from point "C" until the desired value is reached, then press ↵ to save.

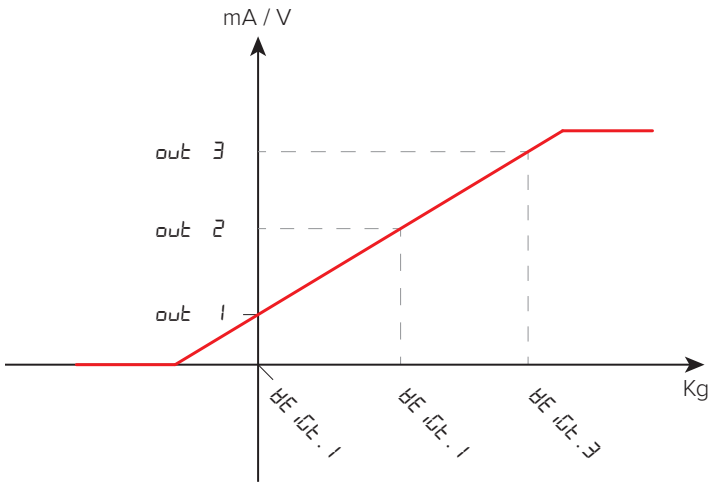


F

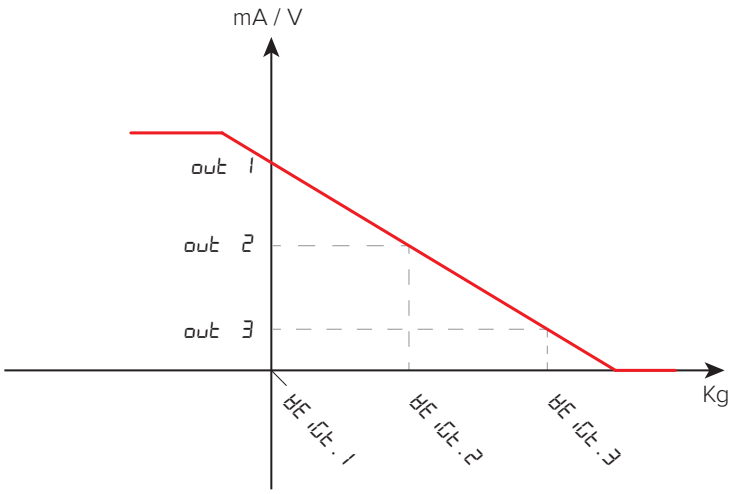
Save the changes (press the C key several times until you reach the message [SAVEP], then press the ↵ key to confirm).

ANALOG OUTPUT GRAPHS:

Positive weight operation



Negative weight operation



Voltage or current operation is determined by the connection to the transmitter terminals:

Current: 9 (+) and 10 (-).
Voltage: 11 (+) and 12 (-).

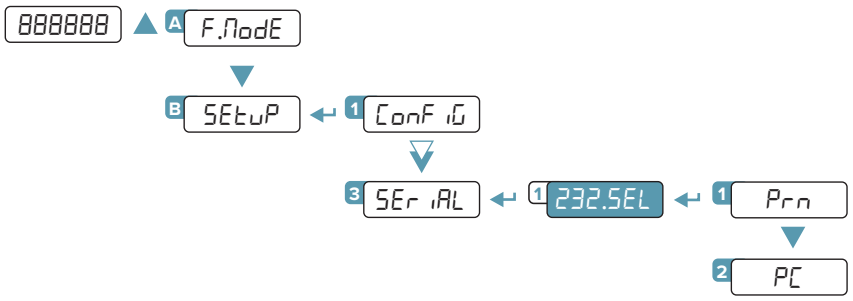
LEGEND:

Indicates repeated pressing of the ▼ key.
Parameter visible only under certain conditions.
Parameter or menu subject to approval.
Default value of the parameter.

Serial 232 communication configuration

Instrument versions without fieldbus provide a 232 port, that is configurable as a PRN or PC.
The USB port always allows quick connection to the PC to change / save / restore the transmitter settings at any time. It is necessary to choose which port to use as PC and, consequently, which one to use as PRN.

PC serial port selection



Use of serial port 232 as PC port (Pin 13, 14 and 15).

One-directional mode with PC, thermal printer, or repeater

Bidirectional mode with PC or PLC

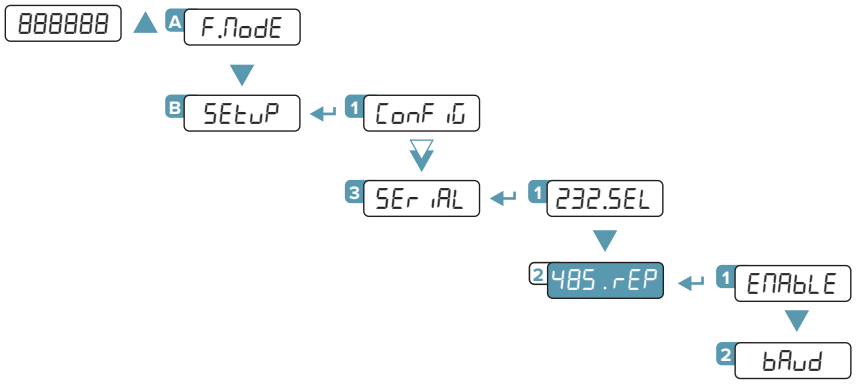
232 Port is not available in models: **DGT4XPB**, **DGT4XMODTCP**, **DGT4XETHCAT**, **DGT4XPRONET**, **DGT4XETHIP**,

Serial 485 repeater configuration

It is possible to connect an external repeater to the 485 port. The instrument provides the standard Dini Argeo string (see page 55) to the indicator 2 times a second:
ST,NT, 1000,kg<CR><LF>

The transmitter scans all the load cells, then sends the data to the repeater (changing baud rate, if different from the load cells), then changes the baud rate back to match the load cells.

Selection of the 485 Repeater serial port



Enables or disables a repeater

Selects the repeater's baud rate

Complete menu on pages **24 - 25**

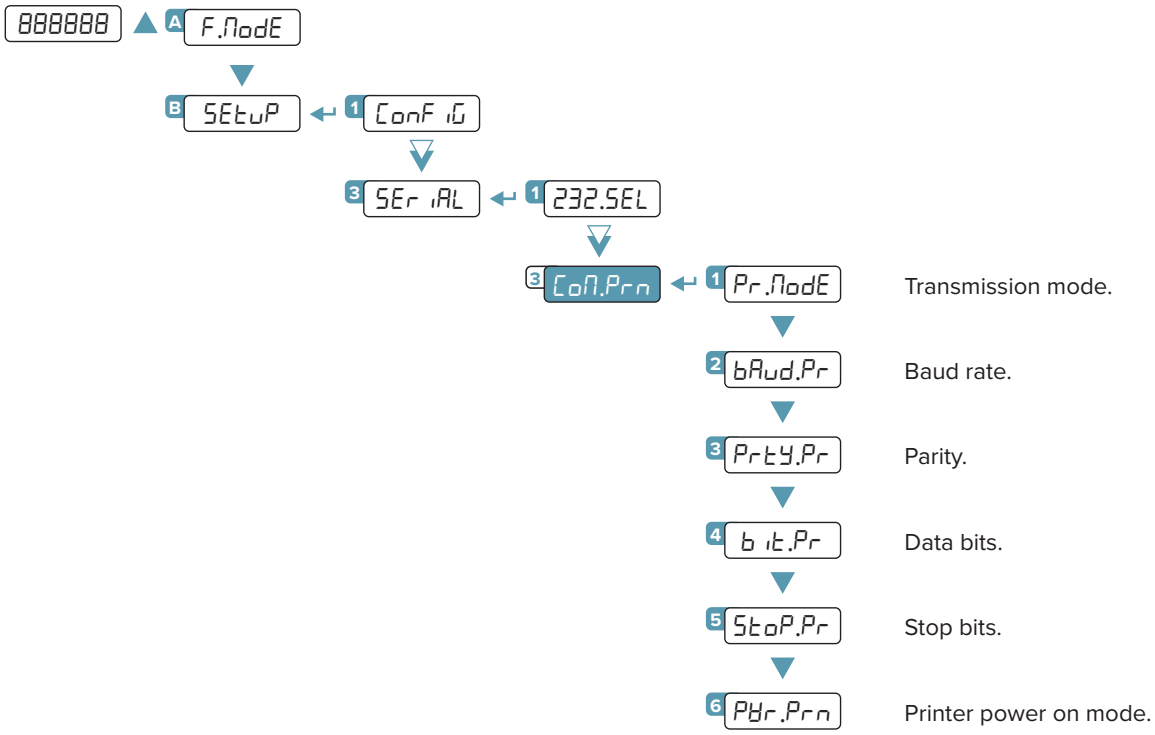
MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Configuration of the printer port (COM.PRN)



Transmission mode

1 Pr.ModE ↵ 1 Pr-no ⚙ Transmission not enabled.

2 PrPC.hA Transmission of the weight value when the ↵ key is pressed.

3 rEPE.6 Transmission of the weight to DINI ARGEO 6-digit repeater.

* 4 PrPC.EH Extended string transmission when the ↵ key is pressed.

* 5 PrPC.St Standard string transmission when the ↵ key is pressed.

6 ALL.EHt Continuous transmission of the extended string.

* 7 ALL.Std Continuous transmission of the standard string.

8 tPr Enables printing on DINI ARGEO printer.

i For the specifications of transmission modes, strings and protocols see the section **"TRANSMISSION PROTOCOLS"**.
Setting *Pr.ModE = rEPE.6* automatically sets the serial port to 4800, N-8-1. It is however possible to set it differently.

* When selecting one of these protocols, you are asked if you want to display the 485 address at the beginning of the string:
dEU. id ↵ *YES / no*.

LEGEND:

▽ *Indicates repeated pressing of the ▼ key.*

Parameter visible only under certain conditions.

M *Parameter or menu subject to approval.*

⚙ *Default value of the parameter.*

Baud rate, parity, data bits, stop bits

2 bAud.Pr ↵ 1 9600 ⚙
2 4800
3 2400
4 1200
5 115200
6 57600
7 38400
8 19200

3 PrtY.Pr ↵ 1 nonE ⚙ No parity, 8 data bits, 1 stop bit.
2 EUEn Even.
3 odd Odd.

4 bit.Pr ↵ 1 8 ⚙ 8 bits.
2 7 7 bits.

5 StoP.Pr ↵ 1 1 ⚙ 1 stop bit.
2 2 2 stop bits.

Printer power on mode

It is possible to set the way the printer is turned on:

6 PWr.Prn ↵ 1 PWr.EHt ⚙ Printer always on.
2 EHt.oFF Printer turned on at the time of printing.

CTS signal

On serial port 232 there is the CTS (Clear to send) signal in pin 16.

7 Prn.CtS ↵ 1 noCtS ⚙ CTS signal not managed.
2 EMuCtS Emulation of the CTS signal.

visible only if Pr .ModE = tPr

Print language

8 Pr.ConF ↵ 1 LAnG ↵ 1 itAL ⚙ Italian.
2 ESPA Spanish.
3 FrAn French.
4 dEut German.
5 EnGL English.

2 SEt.t ic Ticket number setting.

visible only if Pr .ModE = tPr

i Using the Dini tools software you can configure additional printing parameters.

Complete menu on pages **24 - 25**

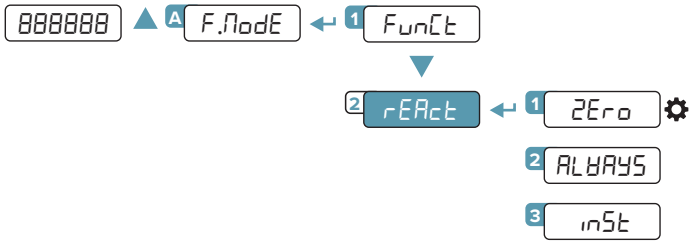
MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Reactivation printing



Reactivation of printing after the weight has changed from zero.

Printing always active.

Reactivation of printing after the weight has changed from instability.

LEGEND:

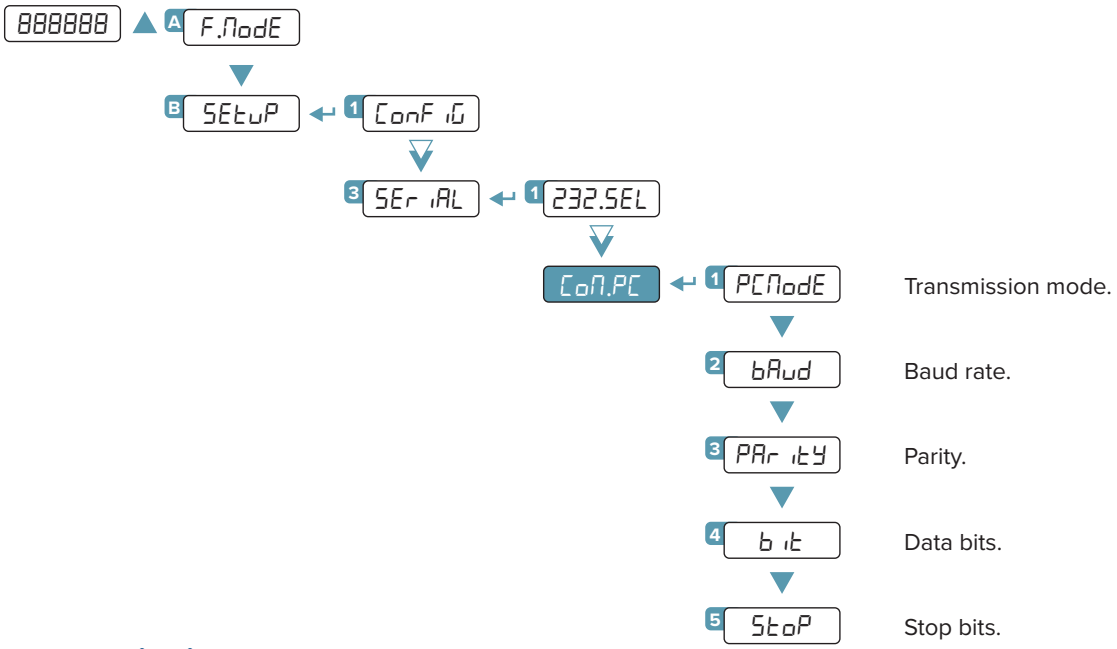
Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Configuration of the PC port (COM.PC)



Transmission mode

1 PCModE ↵ 1 ondE — Transmission on demand.

2 rEPE.6 — Transmission of the weight on DINI ARGEO 6-digit repeater.

(*) 3 Pr in.St — Standard string transmission when the ↵ key is pressed.

(*) 4 Pr in.EH — Extended string transmission when the ↵ key is pressed.

5 485 — Transmission with 485 protocol (enter the 485 address of the transmitter).

6 ModbuS ⚙ — Transmission with Modbus protocol.

6 FLd.buS — Transmission with Fieldbus protocol.

7 ALL.MAH — Continuous high speed weight transmission for conversion applications.

(*) 8 ALL.Std — Continuous transmission of the standard string.

(*) 9 ALL.EHt — Continuous transmission of the extended string.

(*) 10 StAb.St — Stable transmission of the standard string.

(*) 11 StAb.EH — Stable transmission of the extended string.

(*) When selecting one of these protocols, you are asked if you want to display the 485 address at the beginning of the string: dEU. id ↵ YES / no.

Complete menu on pages **24 - 25**

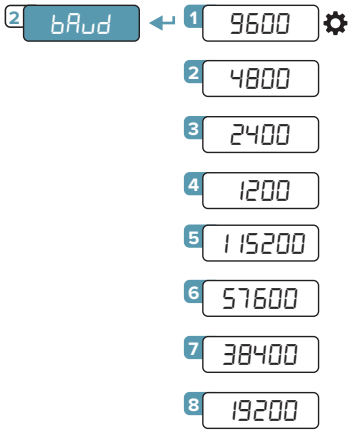
MENU ACCESS:

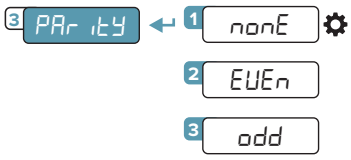
888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊂ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Baud rate, parity, data bits, stop bits

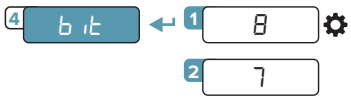




No parity, 8 data bits, 1 stop bit.

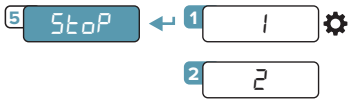
Even.

Odd.



8 bits.

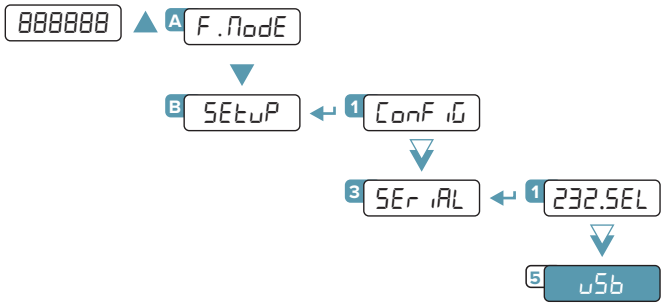
7 bits.



1 stop bit.

2 stop bits.

Configuration of the USB port



Useful for the configuration of the instrument from PC with Dini tools.

LEGEND:

Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

Standard string

[01]ST,GS, 0.0,kg<CR LF>

Where:

01	Transmitter code 485 *(2 characters)*, only if communication mode 485 is enabled
ST	Scale status *(2 characters)*: US - Unstable weight ST - Stable weight OL - Weight overload *(out of range)* UL - Weight underload *(out of range)*
,	Character ASCII 044
GS	Type of weight data *(2 characters)* GS - Gross NT - Net VL - Microvolts RZ - Converter points
,	Character ASCII 044
0.0	Weight *(8 characters including the decimal point)*
,	Character ASCII 044
kg	Unit of measurement *(2 characters)*
<CR LF>	Transmission terminator, characters ASCII 013 and ASCII 010

Extended string

[01]1ST, 0.0,PT 20.8, 0,vv,01/02/19 11:12:13<CR LF>

Where:

01	Transmitter code 485 *(2 characters)*, only if communication mode 485 is enabled
1	Number of the active scale
ST	Scale status *(2 characters)*: US - Unstable weight ST - Stable weight OL - Weight overload *(out of range)* UL - Weight underload *(out of range)*
,	Character ASCII 044
0.0	Weight *(8 characters including the decimal point)*
,	Character ASCII 044
PT	Preset tare indication
20.8	Tare *(8 characters including the decimal point)*
,	Character ASCII 044
0	Character ASCII 048
,	Character ASCII 044
kg	Unit of measurement *(2 characters)*
,	Character ASCII 044
01/02/19 11:12:13	dd/mm/yy hh:mm:ss (only with REXD command and optional clock card)
<CR LF>	Transmission terminator, characters ASCII 013 and ASCII 010

Serial commands

By selecting the PC port on demand mode (onDE), you can communicate with the transmitter via serial commands.
For each command received, the transmitter emits a string containing the response (refer to the command description) or one of the following signals:

OK<CR LF>	Command sent when sending a correct command. This response does not imply that the command is executed.
ERR01<CR LF>	Command sent correctly but followed by letters entered unintentionally (e.g. READF, TARES).
ERR02<CR LF>	Incorrect command data.
ERR03<CR LF>	Command sent not allowed (transmitter busy, or not used in the selected operating mode).
ERR04<CR LF>	Command sent non-existent.

i If the 485 protocol has been selected, you must precede the command with the transmitter address (e.g. 01READ).

WEIGHT READING (standard string)

Format	R	E	A	D	<CR LF>
Response	Standard string<CR LF>.				

WEIGHT READING (extended string)

Format	R	E	X	T	<CR LF>
Response	Extended string<CR LF>.				

WEIGHT READING IN HIGH RESOLUTION (X10)

Format	G	R	1	0	<CR LF>
Response	Standard string with weight in resolution x10 <CR LF>.				

AUTOMATIC TARE

Format	T	A	R	E	<CR LF>
Response	OK<CR LF> (or ERRxx).				

MANUAL TARE

Format	T	M	A	N	t	t	t	t	t	t
	<CR LF>									
Where	ttttt	tare value								
Response	OK<CR LF> (or ERRxx).									

By entering a manual tare value of 0, the tare on the scale is cleared.

ZEROING (of active channel)

Format	Z	E	R	O	<CR LF>
Response	OK<CR LF> (or ERRxx).				

DISABLING KEYPAD

Format	K	E	Y	E	D	<CR LF>
Response	OK<CR LF> (or ERRxx).					

ENABLING KEYPAD

Format	K	E	Y	E	E	<CR LF>
Response	OK<CR LF> (or ERRxx).					

READING INPUTS

Format	I	N	P	U	n	<CR LF>			
Where	n	Input (1 / 2).							
Response	I	N	P	U	n	v	v	v	v
	<CR LF>								

Where	n	Input number.
	vvvv	Input status: 0000 = Not active. 0001 = Active. FFFF = Input reading error.

READING OUTPUTS

Format	O	U	T	S	n	<CR LF>			
Where	n	Output (1 / 2).							
Response	O	U	T	S	n	v	v	v	v
	<CR LF>								

Where	n	Output number.
	vvvv	Output status: 0000 = Not active. 0001 = Active. FFFF = Output reading error.

PRESSING A KEY

Format	K	E	Y	P	x	x	<CR LF>

Where		
	xx	Key code.
	00	▼
	01	▲
	02	▶
	03	↵
	04	⊂

Response	OK<CR LF> (or ERRxx).

i To simulate pressing a key, you must send the KEYP and KEYR commands in succession.
If more than 1.5 seconds pass after the KEYP command is sent, the transmitter will execute the function associated with prolonged pressing of the key.

RELEASING A KEY

Format	K	E	Y	R	<CR LF>

Response	OK<CR LF> (or ERRxx).

BRIDGE BETWEEN THE SERIAL PORTS

Format	B	R	I	D	G	E	1	<CR LF>

Response	OK<CR LF> (or ERRxx).

SCALE INFORMATION

Format	R	A	L	L	<CR LF>

Response																							
	s	s	,	b	,	N	N	N	N	N	N	u	u	,	L	L	L	L	L	L	u	u	,
	Y	Y	T	T	T	T	T	T	u	u	,	S	S	S	,	A	A	A	,	C	C	C	C
	,	,	R	R	R	R	R	-	I	I	I	I	I	I	<CR LF>								

Where		
	ss	UL = Underload. OL = Overload. ST = Stable weight. US = Unstable weight.
	b	Number of the active scale.
	NNNNNNuu	Net weight with unit of measurement.
	LLLLLLuu	Gross weight with unit of measurement.
	YY	PT if a manual tare is present or “ ”.
	TTTTTTuu	Tare with unit of measurement.
	SSS	Scale status: 000 = scale weighing. 001 = entering a numerical value. 002 = scale in technical menu.
	AAA	Counter keys pressed: 0001 = ▼ 0002 = ▲ 0003 = ▶ 0004 = ↵ 0170 = ⊂
	CCCC	Code of last key pressed.
	RRRRR	Last rewrite number saved to Alibi memory.
	IIIIII	Last ID number saved to Alibi memory.

READING OF MICROVOLTS

Format	M	V	O	L
Response	Standard string<CR LF>.			

READING OF CONVERTER POINTS

Format	R	A	Z	F
Response	Standard string<CR LF>.			

INITIALISING ALIBI MEMORY

Format	A	L	D	L
Response	ALDLOK / ALDLNO <CR LF>			

WEIGHT READING WITH DATE AND TIME

Format	R	E	X	D
Response	Extended string<CR LF>.			

READING A WEIGHING OPERATION IN THE ALIBI MEMORY

Format	A	L	R	D	X	X	X	X	X	-	Y	Y	Y	Y	Y	Y	<CR LF>
Response	b	,	L	L	L	L	L	L	L	L	L	L	u	u	,		
	Y	Y	T	T	T	T	T	T	T	T	T	T	u	u	<CR LF>		

Where		
	b	Scale number.
	LLLLLLLLLuu	Gross weight with unit of measurement.
	YY	“PT if a manual tare is present or “ ”.
	TTTTTTTTTuu	Tare with unit of measurement.

SAVING A WEIGHING OPERATION IN THE ALIBI MEMORY

Format	P	I	D	<CR LF>

Response	P	I	D	S	T	,	b	,	L	L	L	L	L	L	L	L	L	u	u	,	Y	Y
	T	T	T	T	T	T	T	T	T	T	u	u	,	X	X	X	X	X	-	Y	Y	Y	Y
	Y	Y	<CR LF>																			

Where		
	b	Scale number.
	LLLLLLLLLuu	Gross weight with unit of measurement.
	YY	“PT if a manual tare is present or “ ”.
	TTTTTTTTTuu	Tare with unit of measurement.
	XXXXX	Rewrite number.
	YYYYYY	ID number.

The alibi memory commands are executed only if FunCt = AL ib 1.

In IND.CH mode, if the commands **“ZERO”**, **“TARE”** and **“TMAN”** are followed by “**,X**”, the command is executed only on the indicated scale. For example:

Format	T	A	R	E	,	X	<CR LF>

Where	
X	Scale: 0 = scale 1 1 = scale 2 2 = scale 3 3 = scale 4

Response	OK<CR LF> (or ERRxx).

Format	Z	E	R	O	,	X	<CR LF>

Where	
X	Scale: 0 = scale 1 1 = scale 2 2 = scale 3 3 = scale 4

Response	OK<CR LF> (or ERRxx).

The fieldbus protocol is described in the respective manual.

Modbus Protocol

MODBUS REGISTERS FOR DATA READING (SINGLE SCALE)

Data	Register	DESCRIPTION	
Gross Weight	30001	Gross weight value.	
	30002		
Net Weight	30003	Net weight value.	
	30004		
Input status register	30005	Bit 15 (msb) Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit 8 (lsb)	Active channel. Active channel. Not used. Not used. Not used. Not used. Input no. 2 status. Input no. 1 status.
		Bit 7 (msb) Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 (lsb)	Gross zero zone (0 = “outside zone 0”; 1 = “in zone 0”). Tare PT (1 = a preset tare is active). Tare (1 = a tare is active). Overload condition (0 = No; 1 = Overload). Underload condition (0 = No; 1 = Underload). Stability (0 = Unstable; 1 = Stable). Gross weight sign (0 = “+”; 1 = “-”). Net weight sign (0 = “+”; 1 = “-”).
Command status register	30006	Last command received.	
		Bit 7 (msb) Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 (lsb)	Last command result. Last command result. Last command result. Last command result. Processed command count. Processed command count. Processed command count. Processed command count.
Output status register	30007	No function.	
		Bit 7 (msb) ... Bit 2 Bit 1 Bit 0 (lsb)	Not used. ... Not used. Digital output 1 status (0 = OFF; 1 = ON). Digital output 2 status (0 = OFF; 1 = ON).
µV Channel 1	30111	µV of channel 1.	
µV Channel 2	30112	µV of channel 2.	
µV Channel 3	30113	µV of channel 3.	
µV Channel 4	30114	µV of channel 4.	

MODBUS REGISTERS FOR DATA READING (MULTI-SCALE)

Data	Register	DESCRIPTION	
Status register scale 1	40202	Bit 15 (msb) Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit 8 (lsb)	Not used. Not used. Not used. Scale active (0 = “no”; 1 = “yes”). Decimals (00 = 0; 01 = 1; 10 = 2; 11 = 3) Unit of Measure (00 = "g"; 01 = "kg"; 10 = "t"; 11 = "lb").
		Bit 7 (msb) Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 (lsb)	Preset tare (0 = “no”; 1 = “yes”). Active tare (0 = “no”; 1 = “yes”). Net weight polarity (0 = “+”; 1 = “-”). Gross zero zone (0 = “outside zone 0”; 1 = “in zone 0”). Overload condition (0 = No; 1 = overload). Underload condition (0 = No; 1 = underload). Stability (0 = “unstable”; 1 = “stable”). Gross weight sign (0 = “+”; 1 = “-”).
Gross weight scale 1	40203 40204	Gross weight of scale 1.	
Status register scale 2	40205	As Status register scale 1.	
Gross weight scale 2	40206 40207	Gross weight of scale 2.	
Status register scale 3	40208	As Status register scale 1.	
Gross weight scale 3	40209 40210	Gross weight of scale 3.	
Status register scale 4	40211	As Status register scale 1.	
Gross weight scale 4	40212 40213	Gross weight of scale 4.	
Net weight scale 1	40214 40215	Net weight of scale 1.	
Net weight scale 2	40216 40217	Net weight of scale 2.	
Net weight scale 3	40218 40219	Net weight of scale 3.	
Net weight scale 4	40220 40221	Net weight of scale 4.	

MODBUS REGISTERS FOR SENDING COMMANDS

<table>
<tr><th>Data</th><th>Register</th><th>DESCRIPTION</th></tr>
<tr><td>Command</td><td>40232</td><td>Main commands available:
<table>
<tr><th>Value</th><th>Command</th></tr>
<tr><td>00 Hex</td><td>No command</td></tr>
<tr><td>01 Hex</td><td>Zero</td></tr>
<tr><td>02 Hex</td><td>Tare</td></tr>
<tr><td>03 Hex</td><td>Predetermined tare</td></tr>
<tr><td>0A Hex</td><td>Setting setpoint 1</td></tr>
<tr><td>0B Hex</td><td>Setting setpoint 2</td></tr>
<tr><td>19 Hex</td><td>Setting digital outputs</td></tr>
<tr><td>22 Hex</td><td>Rebooting the transmitter</td></tr>
</table></td></tr>
<tr><td rowspan="2">Parameter 1</td><td>40233</td><td rowspan="2">First command parameter.
The parameter is always expressed as an absolute value (no decimal / sign).</td></tr>
<tr><td>40234</td></tr>
<tr><td rowspan="2">Parameter 2</td><td>40235</td><td rowspan="2">Second command parameter.
The parameter is always expressed as an absolute value (no decimal / sign).</td></tr>
<tr><td>40236</td></tr>
</table>

EXAMPLE 1

To reset the weight on the scale:

2. Set the command in byte 2

Register	Value
40232	01 Hex

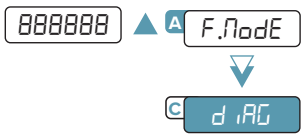
EXAMPLE 2

To set a predetermined tare of 1000kg:

1. Set the value in parameter 1 (byte 3, 4, 5, 6)
2. Set the command in byte 2

Register	Value
40232	03 Hex
40233	03 Hex
40234	E8 Hex

Diagnostics



1 PrG.UEr — Display of firmware release (e.g. 01.06.00).

2 MAnuF.d — Display of firmware libraries (for use by the manufacturer).

3 d.iU.int — Display of calibration internal divisions.

4 AdC.Pnt — Display of the A/D points of the converter related to the weight on the scale.
Use the ▲ and ▼ keys to display the different channels (in dEP.Ch mode the sum is also visible).

For correct operation, the value of A/D points must be stable, and increase if a load is applied to the cell.

5 UE.iGht — Display of the weight on the scale.
Use the ▲ and ▼ keys to display the different channels.

6 CAL.PtS — Display of calibration points with corresponding A/D point values.
Use the ▲ and ▼ keys to display the different calibration points.
Press the ▶ key to display the different channels.

7 d.c.S.n. — Display of digital load cell SNs (visible only with RCD and RCPTD).
Use the ▲ and ▼ keys to display the different load cells.
The display alternates between the load cell number and the SN.

8 diSPLA — Activation of all display segments and indicators.

9 KEYb — The code of last key pressed is shown on the display:

▼	8001
▲	8002
▶	8003
↵	8004
C	80AA

Press the same key 3 consecutive times to exit.

10 SEr — Bridge between serial ports (for manufacturer's use).

11 outPut — Activation of the output shown on the display (rEL.1 / rEL.2).
Use the ▲ and ▼ keys to activate the two outputs.

LEGEND:

Indicates repeated pressing of the ▼ key.

Parameter visible only under certain conditions.

Parameter or menu subject to approval.

Default value of the parameter.

12 inPutS — Checking the status of the inputs:
value 0 indicates that the input is disabled, value 1 indicates that the input is enabled.
Use the ▲ and ▼ keys to display the two inputs.

13 An.out — Analog output test.
Use the ▲, ▼, ▶ keys to enter the D/A point value of the analog output.
Press the ↵ key to confirm and update the V / mA value of the analog output.

14 SEr.nuM — Display of transmitter serial number.

15 S.rAd io — Radio channel display and setting.

16 rEP.tSt — Tests repeater functionality.

👁 visible only if 485 . rEP = EnAbLE

Unbalancing

The instrument has an active unbalance function as standard that signals if the load is unevenly distributed, compared to the stored condition.

Imbalance occurs when the load distribution percentage value on a cell deviates by at least 10% for more than 3 seconds.
It is possible to change these value with the following parameters:

888888 ▲ A F.ModE ↵ 1 FunCt

6 unbAL ↵

- 1 MAX.unb — Maximum percentage of variation allowed compared to the stored values (⚙ = 10).
- 2 unb.Str — Storage of the current percentage values.
- 3 MAXDun — Maximum percentage of variation at zero allowed compared to the stored values (⚙ = 10).
- 4 unb.t in — Minimum time for unbalancing signaling (⚙ = 3).

Complete menu on pages **24 - 25**

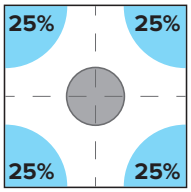
MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

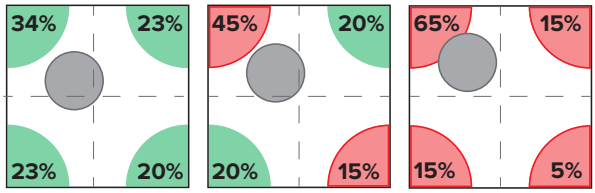
SAVING THE PARAMETERS:

Press the ⊂ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Example:



Condition stored

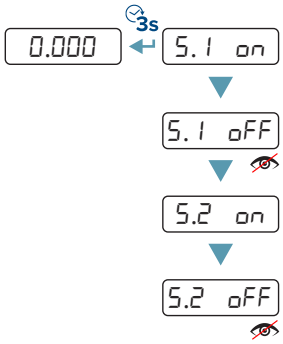


The unbalance condition is signalled via Modbus / Fieldbus or a digital output (*Func = 3 I.unb*).

> This function is only available if *EHCL.Ch = nonE*.
> Use this function only in systems where the load is evenly distributed.

Programming the Setpoints

In weighing mode, if the output functions (*1 Gross / 2 nEt*) have been set correctly, pressing ↵ **for 3 seconds** will enter the setpoint programming menu:



Output 1 activation value.

Output 1 deactivation value. — visible only if *rL.1St = 1St.on*

Output 2 activation value.

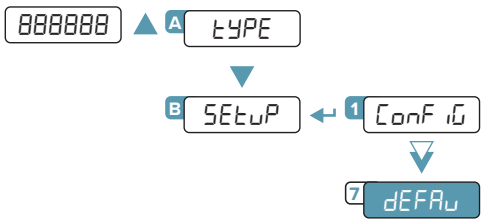
Output 2 deactivation value. — visible only if *rL.1St = 1St.on*

Once you have entered the desired values, press ⊏. The display shows "*StorE*" and returns to weighing mode.

LEGEND:

- *Indicates repeated pressing of the ▼ key.*
- *Parameter visible only under certain conditions.*
- *Parameter or menu subject to approval.*
- *Default value of the parameter.*

Restoring factory settings



The transmitter is initialized and the default parameters (indicated by the ⚙ symbol) are activated. Pressing ↵ the display shows "dFLtP" confirm further with ↵ or exit by pressing another key.

The actual activation of the default parameters is performed by saving the settings (SAVEP) while exiting the menu.

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. Press the ↵ key to confirm.

Fieldbus Register Pages (with Digital Load Cells)

Page	Hex	Name
2000	7D0	Estimate single digital cell weights (cells 1÷4)
2004	7D4	Percentage load distribution cells 1÷8 digital cells
2009	7D9	Estimate single digital cell weights (cells 5÷8)
2010	7DA	Estimate single digital cell weights (cells 9÷12)
2011	7DB	Estimate single digital cell weights (cells 13÷16)
2012	7DC	Percentage load distribution cells 9÷16 digital cells
5012	1384	Load unbalance and cell warning settings
5013	1395	Percentage load distribution stored cells 1÷4, ÷-8 digital cells
5014	1396	Percentage load distribution stored cells 9÷16 digital cells
6200	1838	Digital cell characteristics (digital cells)
6201	1839	Type 1 and type 2 cells
6202	183A	Type 3 and type 4 cells
6203	183B	Type 5 cells

First 16 Bytes

There are several register pages for the DGT4X. Each of these pages begin with the following 16 bytes:

Byte	Name
1	Gross weight (B3) - (*)
2	Gross weight (B2)
3	Gross weight (B1)
4	Gross weight (B0)
5	Net weight (B3) - (*)
6	Net weight (B2)
7	Net weight (B1)
8	Net weight (B0)
9	Input Status register (B1)
10	Input Status register (B0)
11	Command Status register (B1)
12	Command Status register (B0)
13	Output Status register (B1)
14	Output Status register (B0)
15	Page number (B1)
16	Page number (B0)

* Values can be integer value, absolute, signed, or float depending on indicator configuration.

INPUT STATUS REGISTER

Bit	Description	Significant Bit	
		0	1
(LSB/B0)			
0	Net Weight Polarity	+	-
1	Gross Weight Polarity	+	-
2	Weight Stability	No	Yes
3	Underload Condition	No	Yes
4	Overload Condition	No	Yes
5	Tare Entered	No	Yes
6	Manual Tare	No	Yes
7	ZERO gross zone	Outside Zone 0	In Zone 0
(MSB/B1)			
8	Input 1	Disabled	Activated
9	Input 2	Disabled	Activated
10	Input 3 (where available)	Disabled	Activated
11	Input 4 (where available)	Disabled	Activated
12	Little endian	No	Yes
13	More independent channels	No	Yes
14	Channel displayed (low bit)*		
15	Channel displayed (high bit)(0 to 3) *		

* 00 ➔ channel 1, 01 ➔ channel 2, 10 ➔ channel 3, 11 ➔ channel 4

OUTPUT STATUS REGISTER (1 SCALE ONLY OR SCALE MODE)

Bit	Description	Significant Bit	
		0	1
(LSB)			
0	RELE' 1 (relay/digital output 1)	Not Excited	Excited
1	RELE' 2 (relay/digital output 2)	Not Excited	Excited
2	RELE' 3 (where available, relay/digital output 3)	Not Excited	Excited
3	RELE' 4 (where available relay/digital output 4)	Not Excited	Excited
4	RELE' 5 (where available relay/digital output 5)	Not Excited	Excited
5	RELE' 6 (where available (relay/digital output 6)	Not Excited	Excited
6	Unit (b0)	00 = g	01 = kg
7	Unit (b1)	10 = t	11 = lb
(MSB)			
8	Channel 1 error	See next page	
9	Channel 2 error		
10	Channel 3 error		
11	Channel 4 error		
12	Channel global error		
13	Decimals (b0)	00 = 0	01 = 1
14	Decimals (b1)	01 = 2	11 = 3
15	Heart beat	Bit varies from second to second if communication is active between scale and isntrument	

DIGITAL CELLS ERRORS: CH 1 ERROR, CH 2 ERROR, CH 3 ERROR, CH 4 ERROR AND CH GLOBAL ERROR
Bits take on the following meaning:

Ch Global Error	Ch 4 Error	Ch 3 Error	Ch 2 Error	Ch 1 Error	Description
0	x	x	x	x	No error
1	0	0	0	0	Error cell 1
1	0	0	0	1	Error cell 2
1	0	0	1	0	Error cell 3
1	0	0	1	1	Error cell 4
1	0	1	0	0	Error cell 5
1	0	1	0	1	Error cell 6
1	0	1	1	0	Error cell 7
1	0	1	1	1	Error cell 8
1	1	0	0	0	Error cell 9
1	1	0	0	1	Error cell 10
1	1	0	1	0	Error cell 11
1	1	0	1	1	Error cell 12
1	1	1	0	0	Error cell 13
1	1	1	0	1	Error cell 14
1	1	1	1	0	Error cell 15
1	1	1	1	1	Error cell 16

Page 2000 (0x7D0 hex) - Estimate individual load cell 1÷4 Weights

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Gross weight load cell 1 (B3)
18	Gross weight load cell 1 (B2)
19	Gross weight load cell 1 (B1)
20	Gross weight load cell 1 (B0)
21	Gross weight load cell 2 (B3)
22	Gross weight load cell 2 (B2)
23	Gross weight load cell 2 (B1)
24	Gross weight load cell 2 (B0)
25	Gross weight load cell 3 (B3)
26	Gross weight load cell 3 (B2)
27	Gross weight load cell 3 (B1)
28	Gross weight load cell 3 (B0)
29	Gross weight load cell 4 (B3)
30	Gross weight load cell 4 (B2)
31	Gross weight load cell 4 (B1)
32	Gross weight load cell 4 (B0)

Page 2004 (0x7D4 hex) - Load Distribution Percentage load cells 1÷8

Whole values with 2 decimal places (-327.68% / +327.67%)

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Percentage load cell 1 (B1)
18	Percentage load cell 1 (B0)
19	Percentage load cell 2 (B1)
20	Percentage load cell 2 (B0)
21	Percentage load cell 3 (B1)
22	Percentage load cell 3 (B0)
23	Percentage load cell 4 (B1)
24	Percentage load cell 4 (B0)
25	Percentage load cell 5 (B1)
26	Percentage load cell 5 (B0)
27	Percentage load cell 6 (B1)
28	Percentage load cell 6 (B0)
29	Percentage load cell 7 (B1)
30	Percentage load cell 7 (B0)
31	Percentage load cell 8 (B1)
32	Percentage load cell 8 (B0)

Page 2009 (0x7D9 hex) - Estimate individual load cell 5÷8 Weights

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Gross weight load cell 5 (B3)
18	Gross weight load cell 5 (B2)
19	Gross weight load cell 5 (B1)
20	Gross weight load cell 5 (B0)
21	Gross weight load cell 6 (B3)
22	Gross weight load cell 6 (B2)
23	Gross weight load cell 6 (B1)
24	Gross weight load cell 6 (B0)
25	Gross weight load cell 7 (B3)
26	Gross weight load cell 7 (B2)
27	Gross weight load cell 7 (B1)
28	Gross weight load cell 7 (B0)
29	Gross weight load cell 8 (B3)
30	Gross weight load cell 8 (B2)
31	Gross weight load cell 8 (B1)
32	Gross weight load cell 8 (B0)

Page 2010 (0x7DA hex) - Estimate individual load cell 9÷12 Weights

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Gross weight load cell 9 (B3)
18	Gross weight load cell 9 (B2)
19	Gross weight load cell 9 (B1)
20	Gross weight load cell 9 (B0)
21	Gross weight load cell 10 (B3)
22	Gross weight load cell 10 (B2)
23	Gross weight load cell 10 (B1)
24	Gross weight load cell 10 (B0)
25	Gross weight load cell 11 (B3)
26	Gross weight load cell 11 (B2)
27	Gross weight load cell 11 (B1)
28	Gross weight load cell 11 (B0)
29	Gross weight load cell 12 (B3)
30	Gross weight load cell 12 (B2)
31	Gross weight load cell 12 (B1)
32	Gross weight load cell 12 (B0)

Page 2011 (07DB hex) - Estimate individual load cell 13÷16 Weights

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Gross weight load cell 13 (B3)
18	Gross weight load cell 13 (B2)
19	Gross weight load cell 13 (B1)
20	Gross weight load cell 13 (B0)
21	Gross weight load cell 10 (B3)
22	Gross weight load cell 10 (B2)
23	Gross weight load cell 10 (B1)
24	Gross weight load cell 10 (B0)
25	Gross weight load cell 15 (B3)
26	Gross weight load cell 15 (B2)
27	Gross weight load cell 15 (B1)
28	Gross weight load cell 15 (B0)
29	Gross weight load cell 16 (B3)
30	Gross weight load cell 16 (B2)
31	Gross weight load cell 16 (B1)
32	Gross weight load cell 16 (B0)

Page 2012 (0x7DC hex) - Load Distribution Percentage load cells 9÷16

Whole values with 2 decimal places (-327.68% / +327.67%)

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Percentage load cell 9 (B1)
18	Percentage load cell 9 (B0)
19	Percentage load cell 10 (B1)
20	Percentage load cell 10 (B0)
21	Percentage load cell 11 (B1)
22	Percentage load cell 11 (B0)
23	Percentage load cell 12 (B1)
24	Percentage load cell 12 (B0)
25	Percentage load cell 13 (B1)
26	Percentage load cell 13 (B0)
27	Percentage load cell 14 (B1)
28	Percentage load cell 14 (B0)
29	Percentage load cell 15 (B1)
30	Percentage load cell 15 (B0)
31	Percentage load cell 16 (B1)
32	Percentage load cell 16 (B0)

Page 5012 (0x1394 hex) - Unbalance settings and cell warning

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	-
18	-
19	Maximum imbalance percentage (B1) (integer 2 decimal places)
20	Maximum imbalance percentage (B0)
21	Maximum imbalance percentage zero (B1) (integer 2 decimal places)
22	Zero maximum imbalance percentage (B0)
23	Unbalance alarm delay (B1) (integer, seconds)
24	Unbalance alarm delay (B0)
25	-
26	-
27	-
28	-
29	-
30	-
31	-
32	-

To set the data, write to the same positions in the output area and use the WRITE_CALIBRATION command (36) with parameter 1 equal to 5013.
To make the changes permanent use the WRITE_FLASH command (28).

Page 5013 (0x1395 hex) - Load distribution stored load cells 1÷8

Whole values with 2 decimal places (-327.68% / +327.67%)

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Percentage load cell 1 (B1)
18	Percentage load cell 1 (B0)
19	Percentage load cell 2 (B1)
20	Percentage load cell 2 (B0)
21	Percentage load cell 3 (B1)
22	Percentage load cell 3 (B0)
23	Percentage load cell 4 (B1)
24	Percentage load cell 4 (B0)
25	Percentage load cell 5 (B1)
26	Percentage load cell 5 (B0)
27	Percentage load cell 6 (B1)
28	Percentage load cell 6 (B0)
29	Percentage load cell 7 (B1)
30	Percentage load cell 7 (B0)
31	Percentage load cell 8 (B1)
32	Percentage load cell 8 (B0)

To set the data, write to the same positions in the output area and use the WRITE_CALIBRATION command (36) with parameter 1 equal to 5013.
To make the changes permanent use the WRITE_FLASH command (28).

To acquire these values, use command (64, 40 hex). Once the command is sent, the calibration status register (bytes 31-32 pages 5001, 5006) is set equal to 7.
At the end of acquisition the calibration status register can take the value 4 if the outcome is positive, or 5 if the weight is unstable.
To save the acquired data use command 28.

Page 5014 (0x1396 hex) - Load distribution stored load cells 9÷16

Whole values with 2 decimal places (-327.68% / +327.67%)

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Percentage load cell 9 (B1)
18	Percentage load cell 9 (B0)
19	Percentage load cell 10 (B1)
20	Percentage load cell 10 (B0)
21	Percentage load cell 11 (B1)
22	Percentage load cell 11 (B0)
23	Percentage load cell 12 (B1)
24	Percentage load cell 12 (B0)
25	Percentage load cell 13 (B1)
26	Percentage load cell 13 (B0)
27	Percentage load cell 14 (B1)
28	Percentage load cell 14 (B0)
29	Percentage load cell 15 (B1)
30	Percentage load cell 15 (B0)
31	Percentage load cell 16 (B1)
32	Percentage load cell 16 (B0)

To set the data, write to the same positions in the output area and use the WRITE_CALIBRATION command (36) with parameter 1 equal to 5013.
To make the changes permanent use the WRITE_FLASH command (28).

To acquire these values, use the command (64, 40 hex). Once the command is sent, the calibration status register (bytes 31-32 pages 5001, 5006) is set equal to 7.
At the end of acquisition the calibration status register can take the value 4 if the outcome is positive, or 5 if the weight is unstable.
To save the acquired data use command 28.

Page 6200 (0x1838 hex) - Managed digital cell characteristics

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Number of cell types (B1)
18	Number of cell types (B0)
19	Current type (B1)
20	Current type (B0)
21	Current cell type: points to zero (B3)
22	Current cell type: points to zero (B2)
23	Current cell type: points to zero (B1)
24	Current cell type: points to zero (B0)
25	Current cell type: full-scale points (B3)
26	Current cell type: full-scale points (B2)
27	Current cell type: full-scale points (B1)
28	Current cell type: full-scale points (B0)
29	-
30	-
31	-
32	-

Page 6201 (0x1839 hex) - Type 1 and type 2 cells

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Type 1: points to zero (B3)
18	Type 1: points to zero (B2)
19	Type 1: points to zero (B1)
20	Type 1: points to zero (B0)
21	Type 1: full-scale points (B3)
22	Type 1: full-scale points (B2)
23	Type 1: full-scale points (B1)
24	Type 1: full-scale points (B0)
25	Type 2: points to zero (B3)
26	Type 2: points to zero (B2)
27	Type 2: points to zero (B1)
28	Type 2: points to zero (B0)
29	Type 2: full-scale points (B3)
30	Type 2: full-scale points (B2)
31	Type 2: full-scale points (B1)
32	Type 2: full-scale points (B0)

Page 6202 (0x183A hex) - Type 3 and type 4 cells

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Type 3: points to zero (B3)
18	Type 3: points to zero (B2)
19	Type 3: points to zero (B1)
20	Type 3: points to zero (B0)
21	Type 3: full-scale points (B3)
22	Type 3: full-scale points (B2)
23	Type 3: full-scale points (B1)
24	Type 3: full-scale points (B0)
25	Type 4: points to zero (B3)
26	Type 4: points to zero (B2)
27	Type 4: points to zero (B1)
28	Type 4: points to zero (B0)
29	Type 4: full-scale points (B3)
30	Type 4: full-scale points (B2)
31	Type 4: full-scale points (B1)
32	Type 4: full-scale points (B0)

Page 6203 (0x183B hex) - Type 5 cells

Byte	Name
1-16	First 16 bytes (see pages 69 ÷ 71)
17	Type 5: points to zero (B3)
18	Type 5: points to zero (B2)
19	Type 5: points to zero (B1)
20	Type 5: points to zero (B0)
21	Type 5: full-scale points (B3)
22	Type 5: full-scale points (B2)
23	Type 5: full-scale points (B1)
24	Type 5: full-scale points (B0)
25	-
26	-
27	-
28	-
29	-
30	-
31	-
32	-

Registers	Function
41042-41060	Unbalance and cell warning settings
42401-42532	Cell Characteristics
42551-42566	Load Dsitribution
42601-42616	Cell Status

Unbalance and cell warning settings

Register	Function
41042	Maximum imbalance percentage
41043	Maximum imbalance percentage zero
41044	Unbalance alarm delay
41045	Percentage channel 1 stored
41046	Percentage channel 2 stored
41047	Percentage channel 3 stored
41048	Percentage channel 4 stored
41049	Percentage channel 5 stored (digital cells)
41050	Percentage channel 6 stored (digital cells)
41051	Percentage channel 7 stored (digital cells)
41052	Percentage channel 8 stored (digital cells)
41053	Percentage channel 9 stored (digital cells)
41054	Percentage channel 10 stored (digital cells)
41055	Percentage channel 11 stored (digital cells)
41056	Percentage channel 12 stored (digital cells)
41057	Percentage channel 13 stored (digital cells)
41058	Percentage channel 14 stored (digital cells)
41059	Percentage channel 15 stored (digital cells)
41060	Percentage channel 16 stored (digital cells)

Cell characteristics

Register	Function
42401	Number of cell types
42402	Selected type
42403	Points to zero cell type 1 (H)
42404	Points to zero cell type 1 (L)
4205	Max points cell type 1 (H)
4206	Max points cell type 1 (L)
42407	Points to zero cell type 2 (H)
42408	Points to zero cell type 2 (L)
42409	Max points cell type 2 (H)
42410	Max points cell type 2 (L)
42411	Points to zero cell type 3 (H)
42412	Points to zero cell type 3 (L)
42413	Max points cell type 3 (H)
42414	Max points cell type 3 (L)
42415	Zero point cell type 4 (H)
42416	Zero point cell type 4 (L)
42417	Max points cell type 4 (H)
42418	Max points cell type 4 (L)
42419	Points to zero cell type 5 (H)
42420	Points to zero cell type 5 (H)
42421	Max points cell type 5 (H)
42422	Max points cell type 5 (L)

Estimated cell weights

Register	Function
42501	Estimated cell 1 weight (H)
42502	Esitmated cell 1 weight (L)
42503	Estimated cell 2 weight (H)
42504	Esitmated cell 2 weight (L)
42505	Estimated cell 3 weight (H)
42506	Esitmated cell 3 weight (L)
42507	Estimated cell 4 weight (H)
42508	Esitmated cell 4 weight (L)
42509	Estimated cell 5 weight (H)
42510	Esitmated cell 5 weight (L)
42511	Estimated cell 6 weight (H)
42512	Esitmated cell 6 weight (L)
42513	Estimated cell 7 weight (H)
42514	Esitmated cell 7 weight (L)
42515	Estimated cell 8 weight (H)
42516	Esitmated cell 8 weight (L)
42517	Estimated cell 9 weight (H)
42518	Esitmated cell 9 weight (L)
42519	Estimated cell 10 weight (H)
42520	Esitmated cell 10 weight (L)
42521	Estimated cell 11 weight (H)
42522	Esitmated cell 11 weight (L)

Register	Function
42523	Estimated cell 12 weight (H)
42524	Esitmated cell 12 weight (L)
42525	Estimated cell 13 weight (H)
42526	Esitmated cell 13 weight (L)
42527	Estimated cell 14 weight (H)
42528	Esitmated cell 14 weight (L)
42529	Estimated cell 15 weight (H)
42530	Esitmated cell 15 weight (L)
42531	Estimated cell 16 weight (H)
42532	Esitmated cell 16 weight (L)

Load distribution

Whole values with 2 decimal places (-327.68% / +327.67%)

Register	Function
42551	Cell 1 load percentage
42552	Cell 2 load percentage
42553	Cell 3 load percentage
42554	Cell 4 load percentage
42555	Cell 5 load percentage
42556	Cell 6 load percentage
42557	Cell 7 load percentage
42558	Cell 8 load percentage
42559	Cell 9 load percentage
42560	Cell 10 load percentage
42561	Cell 11 load percentage
42562	Cell 12 load percentage
42563	Cell 13 load percentage
42564	Cell 14 load percentage
42565	Cell 15 load percentage
42566	Cell 16 load percentage

Cell status

Register	Function
42601	Cell 1 error status
42602	Cell 2 error status
42603	Cell 3 error status
42604	Cell 4 error status
42605	Cell 5 error status
42606	Cell 6 error status
42607	Cell 7 error status
42608	Cell 8 error status
42609	Cell 9 error status
42610	Cell 10 error status
42611	Cell 11 error status
42612	Cell 12 error status
42613	Cell 13 error status
42614	Cell 14 error status
42615	Cell 15 error status
42616	Cell 16 error status

Channel Error status

Value	Description
0	Channel not used
1	Channel ok
2	Channel in error
3	Channel with load percentual over the set maximum (rel. 1.04)
4	Channel excluded (dependent channels) (rel. 1.04)

Errors

Error	Description	
PrEC	Displayed if you try to calibrate a point without first confirming the number of calibration points (ntP).	
Er.Not	Calibration error: unstable weight during point acquisition.	
ErPnt	Calibration error: during the acquisition of a calibration point a NULL value was read from the converter.	
Err.H.1	Error that occurs if the capacity of channel H is not set, or there is an error in the calibration parameters of channel H, where H indicates the number of the channel to which the error refers.	
oUEr H	Error that occurs if the capacity of channel H is not set, or there is an error in the calibration parameters of channel H, where H indicates the number of the channel to which the error refers.	
Er 11	Calibration error: a sample weight that is too low was used; it is recommended to use a weight of at least half the scale's capacity.	
Er 12	Calibration error: The acquired calibration point (tP 1 / tP 2 / tP 3) is equal to the zero point (tP0).	
Er 37	Scale to be calibrated (we recommend resetting the transmitter to the factory default "dEFAu" settings before proceeding).	
Er 39	Scale to be calibrated (we recommend resetting the transmitter to the factory default "dEFAu" settings before proceeding).	
C.Er. -36	Negative internal points were calculated during calibration: • the calibration point is below the zero point; • the signal is negative (check the connections).	
C.Er. -37	Internal points below the minimum value were calculated during calibration: • the calibration point is equal to the zero point; • too high a capacity has been set with respect to the division.	
HW.Err	Hardware error: software not compatible with the installed hardware.	
AL.Err	Displayed when the alibi memory is enabled and the transmitter does not detect the presence of the card when the power is turned on. The ConU function is set automatically, but not saved in the setup environment.	
buSY	Printing in progress (printer serial port busy) or transmitter waiting to transmit a print to PC.	
unStAb	You are trying to print with an unstable weight.	
un.oUEr	You are trying to print with the weight in underload / overload.	
------	The weight is overloaded (9 divisions over the maximum capacity).	
------	The weight is underloaded.	Approved transmitter: -9 divisions.
		Non-approved transmitter: -100 divisions.
GroS.Er	You are trying to print with a non-positive gross weight (less than or equal to zero).	
nEr.Err	You are trying to print with a non-positive net weight (less than or equal to zero).	
no.0.unS	Weight not passed by net 0 or instability.	
ConU	You are trying to print while the transmitter is converting the unit of measurement.	
Err.CLK	Communication problems with the clock card of the transmitter.	
CEL.Err	Signal anomaly: check the connection of the cells.	
Er.CEL.1 ... Er.CEL.4	Signal anomaly: check the connection of the cell indicated.	
EHCL.Ch	You are trying to perform a calibration/point acquisition with an excluded channel. Check the EHCL.Ch parameter in the quick menu (ref. Quick start guide).	
Er.LC.H	Indicates a load cells is disconnected, where X is the load cell ID.	

Complete menu on pages **24 - 25**

MENU ACCESS:

888888 ▲ *Press the ▲ key during the start-up procedure.*

SAVING THE PARAMETERS:

Press the ⊏ key several times, until the display shows SAVEP. *Press the ↵ key to confirm.*

Notes

Notes

Notes

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Stamp of the authorized service centre

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